What is not taught in Medical Colleges!

K. S. Shekar and D.K.Srinivas

Rajiv Gandhi University of Health Sciences
Bangalore

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What is not taught in Medical Colleges!

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Shekar K.S., Srinivas D.K.

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"No na veda iti veda ca"

"Not that I do not know;
I know and I do not know as well"

- Kena Upanishad (11.2)

Preface

It was 2006. I was awarded the Prof. B.N.Balakrishna Rao Oration and was due to deliver the lecture that December in Varanasi, during the Annual Conference of Association of Surgeons of India. As was my custom, I was in search of a new subject to speak on. For long I had been fascinated by the title of the book 'What they do not teach you at Harvard Business School' by Mark H.McCormack. A similar rhyming title 'What is not taught in Medical School' was always in my subconscious mind. It did not take long for it to pop up and I started exploring the subject.

The first person I consulted was Prof.D.K.Srinivas, my good friend and consultant to the Rajiv Gandhi University of Health Sciences (RGUHS), Bangalore. We have been longtime companions on morning walks and quite a few projects were conceived and formalized during our discussions as we walked, including the development of the Curriculum for Post Graduate Degree course, M.S. in General Surgery, which was adopted by RGUHS. He readily agreed that this idea was worth pursuing. I prepared a thirty-page draft and after many revisions the oration was ready. Thankfully, it was well received. After the oration some of my friends insisted that I should enlarge the topic and bring it out as a book for the general good of the profession. That was the genesis of this book.

Writing a book is not easy that too on a topic like this. But once we (D.K. Srinivas and I) decided to go ahead, we did a situation analysis through rapid study of various reports, publications etc., on medical/health professional education. Most of these, for instance, from the popular Bhore Committee (1946)[1] report to that of the Bajaj committee (1991)[2] report in India or from Flexner's original report (1910)[3] to the latest papers on 'One hundred years after Flexner's report' [4,5,6,7] have expressed concern, if not dissatisfaction, about medical education. In other words, the malady existed and still exists

all over the world! The Edinburgh Declaration[8] in 1988 during the World Conference on medical education lamented that "..aim of medical education is to produce doctors who will promote the health of all the people and that aim is not being realized in many places. The individual patient ... expects a doctor trained as an attentive listener, a careful observer, a sensitive communicator and an effective clinician." The Shrivastava committee (1975)[9] identified among other things that "lack of incentives (*read as pride*) for work in rural areas, increasing trend towards acquisition of postgraduate degrees and the attraction of the export market for medical manpower" as some of the maladies.

Prof. Ramalingaswamy, (noted medical educationist, former Director of AIIMS, New Delhi and Director General of ICMR, New Delhi), observed, "The rhetoric for reforms has gone on for far too long, it must result into action.... ." Taking this (as well as the information we had gathered through situational analyses) as cue and recognizing the importance of acquisition of 'soft skills', professionalism, ethical practice, lifelong learning, development of managerial and leadership qualities, abilities required to work as an effective member of a health care team etc., and after consulting general practioners, consultants, teachers and students, we made a list of topics. The next step was not easy: identifying contributors not only suitable but also willing. We also wanted contributors from a wide range of professional field *viz* medical, dental, traditional systems of medicine, who have excelled in their respective fields and have successfully introduced significant and innovative practices. We were fortunate that most of those we approached readily agreed and have contributed.

The book has eight sections organized in a systematic way:

Section I - Personal Development & Continuing Education

Section II - Ethical Issues

Section III - Attributes of a Teacher

Section IV - Managerial Skills

Section V - The Surgeon and Surgical Practice

Section VI - The Doctor India Needs

Section VII - Career Development

Section VIII - Miscellany

For whom is this book intended, asked a friend of ours? We have in mind the nervous first year students taking their first professional examination, be it nursing or AYUSH; the bored third year student of medical jurisprudence who needs to see some humour in medicine; the neophyte intern with MCQs in his apron pocket rather than a dental (mouth) mirror or a stethoscope; the young doctor who wants to be ethical and set up practice away from overcrowded cities; that single turned thirty, unsure of whether to get into wedlock or get away to Australia or Singapore, since PLAB and USMLE have become distant shores! Those who would like to be good teachers and examiners or would rather publish than perish and hence have something to learn about use of libraries or computers for their research. We also have in mind of surgeons whose knots are slipping making them contemplate when to retire or those quality conscious hospital managers or those holistic and spiritually minded seniors asking what is death? Thus, you will notice that the chapters in this book not only deal with personal development but also the type of doctor our country needs.

The canvas is broad. We hope this book would benefit readers and enable them to cope with, if not prevent, stress and bring some cheer to them. We endorse the words of Cox and Ewan that "Opportunities for sharing such a breadth of experience are rarely found; in that fact lie the utility of books such as this." This book, we feel, helps to reach goals defined in the CANMEDS document - a document considered the present standard for the role of a medical professional.[11]

We are also happy that the book is published by Rajiv Gandhi University of Health Sciences (RGUHS), Bangalore.

Acknowledgements

We are grateful to all our esteemed contributors but for whom we could not have compiled this book. Dr. Palitha Abeykoon is an internationally renowned medical educationist. He has made commendable contribution to faculty development and teacher training in the South East Region. We are happy that he readily agreed and wrote the foreword. We are very thankful to him. We also thank Dr.Ravi Rengachari (former Senior Deputy Director, Indian Council of Medical Research, New Delhi) for his help. Mr. Magimai Pragasam, a communication specialist and a former member of Community Health Cell – Society for Community Health Awareness, Research and Action (SOCHARA), Bangalore, drew the illustration that appears on the cover. We are indebted to him as well as to SOCHARA for permitting us to use the illustration.

Dr. Lakshman, Consulting Surgeon, Bangalore, true to his name, stood by us through thick and thin. His contribution in reviewing and editing the manuscripts and his promptness are commendable.

When Dr. Shekar approached Dr. Ramanand Shetty, Vice Chancellor, Rajiv Gandhi University of Health Sciences (RGUHS), Bangalore, with the proposal to publish the book, he was kind enough to listen and immediately appoint a Committee to peruse the manuscript and give their opinion. We are grateful to him for publishing this book.

We express our gratitude to the members of the committee of RGUHS for their patience in going through the manuscript and for giving valuable suggestions which we have incorporated.

We are indebted to Dr. Vasanth Kumar, former Registrar of RGUHS, for taking keen interest in the book, to Dr. Prem Kumar, the present Registrar and Dr.G.V.Niranjan, Director, Curriculum Development,

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Bangalore. K.S. Shekar

4 June 2011 D.K. Srinivas

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FOREWORD

It is a great honour and privilege for me to be invited to write the Foreword of this extremely imaginative and attention-grabbing book, "What is not taught in Medical Colleges". Presenting a rich kaleidoscope of what all of us wish we were adequately exposed to, but unluckily were not, in our own medical education, it signifies an innovative departure from the standard publication on medical education that we are often accustomed to read. This fact alone made the perusal of the manuscript a revealing new learning experience for me. The authors of the different chapters are renowned experts and practitioners in their chosen specialties in medicine and medical education but all of them display a few admirable common features- an abiding love of teaching and a firm commitment to uphold the traditions and the time-honoured values of medical education and practice. In fact three core values underlying the subject matter of this book — first, service before self, second, integrity, and third, excellence in all we do — I like to think that they actually make up a good philosophy of life, a goal worthy of all human beings.

The book comes at a very timely moment when medical educators are at cross roads wondering and exploring the directions that medical education should be heading in a rapidly transforming world. The advances in health technology, the changes in value systems inherent to a globalized world, and the transitions in the epidemiology and demography of our countries all need to be taken into reckoning by medical educators of today. This book contains a judicious mix of managerial, technical and ethical themes, ranging from Empathy and Compassion, Medical Ethics, to Communication and Management, Leadership, Career Development and Research. These align themselves well when we recall that the main purpose of medical education is to produce health personnel who have competence,

compassion and are above all useful citizens and leaders of society. The book does not address all facets of competence as it is not intended to do so, and there are multiple other sources which address this aspect, but even here, it does "add the icing on the cake".

Historically, the emphasis on medical education has been on the biomedical model which placed emphasis on technical skills and proficiency and less on communication and social skills. In more recent times communication and evidence based practice have also become cornerstones in modern medicine. We know how much effective communication helps to increase patient satisfaction and the understanding of the illness. It will improve the doctor-patient relationship which is based on honesty, confidentiality and trust, and consequently, the management of the disease and patient compliance. Certainly it is also essential for ensuring good working relationships among the colleagues in the health team.

Compassion and ethics are dealt here within very practical, attention grabbing ways. Compassion is the act and emotion of taking up one's place with the sufferer and "suffering with the person". Many of today's health care professionals consider compassion to be a frill that does not impact a patient's physical responses. However, emerging data would clearly suggest that compassion has a positive effect on patient's physical, mental, emotional, and spiritual well-being. Compassion in medicine focuses on the ethical realities of health care in addition to the scientific practices of medicine and we will understand the essential role of compassion in medicine, if we can consider medicine as a relational practice that is rooted in the physician-patient relationship. I think you sense this already or else you wouldn't be reading the book! What we need to find out is how actually *to be* more compassionate. We know that compassion is important, but how do we actually make it more readily available? This book will provide many useful insights in this regard.

Patients ideally deserve to have a compassionate doctor, but might they be satisfied with one who is simply well-behaved? When I hear patients complain about doctors, often their criticisms have much less with not feeling understood or empathized with, and rarely with their technical skills. Instead, they object that "he just stared at his computer screen," "she never smiles,", or, "I did not feel respected". On the other hand often patients would say, "doctor is a gentleman" or that, "he is a professional", and this makes me wonder if patients care as much (or less) about whether their doctors are reflective and empathic than whether they are respectful and attentive. Thus, as one of the authors says, I believe that medical education and postgraduate training should place more emphasis than now on this aspect of the doctor–patient relationship — what we might call "etiquette-based medicine."

The subject of medical ethics has also becoming increasingly important, not merely as a discipline in medical schools but more as a matter of day to day practice. WHO in South East Asia has been in the forefront of promoting ethics and ethical guidelines in medical practice, in research, in organ transplantation as well as in the overall organization of health care. Ensuring equity and social justice in health care have always been an important ethical dilemma for health care planners and medial practitioners, but now expensive technologies such as organ transplantation and the compelling need to ration certain medical services to some patients have emerged as crucially urgent ethical issues that need to be addressed.

Patient safety is a new healthcare discipline that emphasizes the reporting, analysis, and prevention of *medical errors* that often lead to *adverse healthcare events*. It has now become a matter of serious concern even in health systems that are well financed, staffed and resourced. It is heartening to note that the book emphasizes why we will need to pay greater attention to all features of patient safety, including the practically important legal ones.

There are so many other very important and practical articles in this volume. All in all this is an exhilarating book from start to finish and I wish to congratulate the panel of experts who have made this very valuable contribution to contemporary medical literature. Finally, in our fast-paced, high-tech health care systems we must be reminded that health care is about people and relationships and that equity and social justice should be our guiding principles.

Dr. Palitha Abeykoon

Colombo

Sri Lanka

Section I

Personal Development & Continuing Education

"The biggest hurdle in the path of human growth is the thought that you know it all."

- Shyam Benegal

1

Communication Skills

What I Wish I knew at Dental School

Dr. Kishore Shekar

> *Think like a wise man but communicate in the language of the people.*
>
> William Butler Yeats
> Irish dramatist & poet (1865 - 1939)

Introduction:

I have had the privilege of studying two undergraduate courses, in two medical specialities, in two different universities of excellence, in two different countries with two very different course objectives. In India I did my undergraduate dental qualification from Karnatak University and in the United Kingdom my MBBS from Queen Mary's University. The emphasis in both places was to make us good doctors. However the ideology to reach this goal is as varied as the histories of these two great nations. While in India the emphasis has always been on knowing the subject thoroughly, in England the emphasis is laid on overall development of knowledge and personality. It would be unfair to state which ideology is better of the two as each serves its population well.

Probably one facet of training that lacks in Indian education is – development of communicating skills. This is probably one of the main reasons why many Indian doctors working here tend to struggle in their early careers. Most learn over a period of time, but a few fail miserably in this very important aspect of inter personal skill.

What makes us good communicators?

There are many requirements to be a good communicator: command

> *"Language is the source of misunderstandings."*
> Antoine de Saint-Exupery,
> French writer (1900 - 1944)

over language, ability to speak with clarity, the gift of public speaking, a good body language and the use of non confrontational approach. However, I believe that of all these, the most important is the ability to formulate thoughts into words.

> *"High thoughts must have high language.*
> Aristophanes Frogs, 405 B.C.
> Greek Athenian comic dramatist (450-388 BC)

In the medical world we ought to be good and effective communicators. It is not just communicating with patients but also with your colleagues, para medical staff, managers and in recent times with the media.

Patients

It would be a rarity that a patient who attends your clinic does not believe in your clinical acumen. What makes you a good doctor in his/her eyes is your inter personal skills. It is important to remember that communicating with the patient is an interview process. This process starts from introduction, goes on to history taking, consent, treatment and follow up. The clinical interview is the most frequently used diagnostic and treatment procedure. Rarely is the diagnosis or treatment changed following a clinical examination. That is to say a working diagnosis is based on history and clinical examination is only an additional tool to confirm our suspicions. In this process of interview it is not just enough to reach a diagnosis but also understand patient's experience of the illness, ideas, expectations and feelings. This is the *illness frame work*. The ability to reach a diagnosis is the *disease framework*. As doctors it is our responsibility to integrate these two frameworks and reach a balance. This requires empathy, non judgmental acceptance and genuineness.

The great gift of human beings is that we have the power of empathy.
Meryl Streep US actress (1949 -)

Please understand the difference between empathy and sympathy. If I were a patient I would not want any sympathy, but what I would look for is a physician who is clinically good but also able to empathize. Look into a thesaurus, empathy simply means compassion and understanding - compassion towards his pain (physical & emotional) and an understanding of his expectations. The ability of the physician to understand patient's expectations is one end of the spectrum, the actual delivery of the expectations is the other end. Very often patient's expectations may be unrealistic. At this stage comes the ability negotiation. Effective communication is the corner stone for the success of this process.

The three primary functions in a consultation process are[1]:

1. Relationship
2. Data gathering
3. Information giving, education and negotiation.

Developing a rapport is the first step in this life long relationship between the doctor and patient. Data gathering is an exercise driven on an agenda. Education and negotiation provides a successful end to this relationship. Two guides to a successful interview process are:

The Calgary – Cambridge guide: A guide to the medical interview[2]

Providing Structure

- Sign Posting
- Sequencing
- Timing
- Summary

Initiating the session

- Preparation
- Establishing initial rapport
- Identifying reason for consultation

Gathering Information

- Background History
- Disease frame work (bio medical)
- Illness frame work (Patient Perspective)

Physical examination

Explanation & planning

- Amount and type of information
- Shared understanding
- Patients illness framework
- Negotiate & shared decision making

Closing the session

Building the relationship

- Non verbal
- Develop rapport
- Involving the patient

The Patient centred Clinical Interview

Patient Presents Unwell

Parallel search of two content framework

Content:
Disease Framework

- History
- Examination
- Investigations

Doctors Agenda

Process (Skills)
Attentive listening
Questioning skills
(opened/closed)
Clarification
Summary
Rapport
(verbal/nonverbal)

Content:
Illness Framework

- Ideas
- Expectation
- Feelings

Patients Agenda

Differential diagnosis

Understanding the patient

Integration
Management Plan

Colleagues and staff

A working environment is based on good team effort. A happy team is a successful one. A team comprises of a leader and his followers. History is replete with great leaders from Gandhi to Churchill, great followers of the leaders from Nehru to Gen Wilson. One needs to be either a leader who leads by example, a good follower who follows instructions but one never must be a pain in the a**.

As one climbs the ladder of hierarchy it is expected that we develop leadership skills. Five separate styles of leadership have been defined:

1. Tells: expects acceptance without debate
2. Sells: Possibility of resistance, therefore attempts to persuade
3. Consults: invites suggestions
4. Participates: group decision
5. Delegates: Subordinates accept responsibility.

An effective leader adopts the correct style depending on the situation. The situations may be task oriented or relationship oriented. Each of the above styles has a role in daily hospital life. As a leader in a trauma setting you tell team members what to do, as an organiser of the hospital annual dinner you sell and delegate responsibility, when reviewing a hospital protocol you consult and encourage participation. Thus a leader tends to be autocratic at times and democratic at others.

One of the requisites to be a great leader or a good team player is the ability to listen and have respect for others opinion. When dealing with opposition it is important to be non confrontational but yet act assertively. Being assertive is not the same as being aggressive. An aggressive person will offend and cause disrespect. This creates an unhealthy atmosphere within the team. An assertive person

understands that each person is entitled to his own thoughts and imparts the idea to the team to say 'No'. What is important is learn to say 'No' in a friendly assertive manner. This way each party leaves the table with their self respect.

> *"The objective of assertive behaviour is not to win all your conflicts at the expense of someone else"*
>
> Gatrell & White

Error is unavoidable in clinical practice at some stage. As a member of a clinical team it is imperative to learn from these mistakes. Criticism at this stage needs to be constructive. What is important is not 'who caused the problem, but what events lead to the problem'. This is the principle of 'incident reports' in the NHS. Although it is aimed to eliminate blame culture, often this is not the case. Criticism should be aimed at the events and not at the person; any solutions should be realistic and stated assertively.

Most often we believe that a team comprises of doctors, nurses and para medical staff. Alas! We forgot for the smooth running of a complicated machinery such as the hospital we need the help of porters, domestics and clerical staff. Although we do not come in close contact with these members of the staff, it is important to recognise their valued service. It is sad that in India till date we do not yet value the contributions of these members of staff. Just imagine an industrial action by domestics of the hospital. The machinery will come to a halt. It is important just to say an occasional thank you. It would make all the difference. Treat them with the same respect as you would treat a consultant. Communicate with them in a friendly manner and not in an autocratic way. Delegate appropriate responsibility and make them feel important and valued.

The day is not far when we make the transition from being a follower to being a leader. It is not enough just to be good, but it is being great that makes the difference. This requires many facets – effectively

communicating, handling stress, dealing with anger and most importantly developing a team spirit.

Making a presentation:

This is nothing but the art of public speaking and effectively communicating to a mass. Any presentation needs an agenda. The agenda can be of two fold:

1. What you want to tell them
2. What they want to hear

Irrespective of what the agenda is it is important to respect the audience. Identify the needs of the audience first. There is no point in teaching a group of consultant surgeons the anatomy of the abdomen when they expect to hear about advances in Laproscopic surgery. Any presentation needs to improve the knowledge of the audience; it is not an exercise to boast your own skills or clinical acumen. Therefore a compromise in the agenda needs to be reached even before the start of the preparation of a presentation.

Clinical presentation should be precise, address the topic and avoid jargon. It is often said that more the pictures better the presentation. Pictures need to be of clinical relevance, not of your holidays or children. The attention span of most audience is between 30 mins – 40 mins. Tell the most important aspect of your topic first. Leave behind the stories for after dinner. At the very beginning, go through the structure of your presentation. The audience would make a decision whether they wish to listen to you or not in the first few minutes. If you fail to capture the audience in these first few minutes you have no hope for the next hour. Sexual and racial controversy needs to be eliminated completely. However humour has its place in moderation. Remember humour to one can be offensive to the other.

Presentations can take the form of didactic lectures or a dialogue. Each has its place depending on the audience and it is your judgment

to see which is better. Power point presentation is considered the standard in today's scientific world. Keep the presentation simple with no special effects as this adds no extra value to your talk. It may only cause an epileptic seizure. The background on slides needs to be blue with white letters at an appropriate font size with Aerial text. Look at motorway signs and you will know what I mean. Too much material on one slide is useless. Divide the content, so that legibility is the objective. Speak clearly and slowly. Practice in front of your peers and take criticism well. It is not necessary for you to know everything, be humble to accept your limitation.

Writing

Communication is not just about speaking and body language. It includes writing too. Writing in the form of a referral letter, your own notes or writing a medico legal report. The most important aspect is legibility. Very often we ourselves are unable to recognise our own writing. Write clearly, does not have to be a complete sentence, but definitely do not use abbreviations unless its an internationally accepted. The value of good note keeping cannot be stated. You will be surprised that they will come to your aid many years down the road – hopefully not in the form of litigation. Surgeons write your own operative notes. Do not forget to sign it and date it.

"Communication is about being effective, not always about being proper."
Bo Bennet

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1. Communication skills course booklet, Barts and The London
2. Cohen Cole & Bird The Medical Interview: The three functional approach, 2000, Mosby

2

Manners, Etiquette and Deportment

Dr. C. S. Rajan

Introduction

The human body is complex. So too, is the human mind and the human spirit. The spectrum of disease and infirmity is vast. When it comes to giving good medical care, you cannot look only at any one facet without consideration of the other facets that make up the whole being.

Let us spend just a moment to look at the word "MEDICINE". It is defined as, "the science of diagnosing, treating, or preventing disease and other damage to the body or mind". When we practice the art and science of Medicine, we treat the patient as a whole, keeping both body and mind in concern.

Does it not surprise you that the first three letters of the word "medicine", namely, the 'm', the 'e', and the 'd', should be the most important when a doctor approaches a patient with the intention of treating him as a whole being. It is the "**M**anners, **E**tiquette, and **D**eportment" that makes the treating doctor strike the right cords of acceptance by the patient. Once this psychological acceptance has been obtained, the 'mind' component of the disease is easily taken care of, and the patient proceeds to a quick physical recovery with the appropriate therapy. The practice of medicine is a science of human interactions and communication, not only with the patients, but with all levels of the healthcare team, senior colleagues, peers, junior doctors, as well as all levels of supportive, paramedical, ancillary and auxiliary staff, administration and industry. And to be on the correct

track for all these, all of us doctors need to have the correct manners, etiquette and deportment.

Definitions

All the three terms of manners, etiquette and deportment are closely related and inter linked, and form the social skills needed for personal and professional success. The dictionary definitions of each of these terms and a few related ones are as follows:

Manners	the socially correct way of acting
Etiquette	the rules governing socially acceptable behaviour
Deportment	the way a person behaves towards other people
Politeness	Marked by or showing consideration for others, tact, and observance of accepted social usage
Bedside manner	manner or conduct of a physician in the presence of a patient

Rather than try to discuss each term separately, I will group all of them into a single heading as "**Professional Etiquette for the Doctor**". This 'professional etiquette' is not only the rules of social behaviour and conduct during the practice of the profession, but also covers all other aspects of life including personal, family and home, and social interaction. It is important to remind yourself to treat others as you would want to be treated. Besides this, professional etiquette adds to your professional pride, creates a congenial working environment, makes you a better person and different from others. After all, the doctor is empowered by virtue of knowledge and the patient is submissive because of his health need. This situation permits the probing of most intimate personal details by a person whom the patient may well never have previously seen (as in a hospital) and this has to be done with all due consideration to the

patient's privacy. It is good to practice professional etiquette with tact and respect.

General professional etiquette

It is important to reflect the standing of a doctor as a humane and considerate individual. Personal hygiene is the initial step in this direction. The show of a personal discipline in this regard is a quick way to overcome the diffidence a patient has on initial contact with the medical professional. A regular bath (removes unpleasant body odours), males generally clean shaven, good oral hygiene and well kempt hair are good initiators of a patient interaction. The dress codes one follows should reflect cleanliness, modesty and comfort and be adjusted to the season/time of the year. Cosmetics, make up and jewelry are allowed, but in tones appropriate to the situation of dealing with the sick, the unwell and the suffering. The use of the doctor's apron (the white coat), while being protective to the underclothing, is the final symbol of attire that affords the recognition of the medical professional. A name badge on the coat helps the patient identify the doctor at a little more personal level.

Three key words form the norm of good social interaction and communication. These are **'please', 'thank you' and 'sorry'** and they form the tripod of good manners. It is important not only to use them freely, but also fill them with meaning and purpose to get the full advantage of the interaction one is involved in. All requests should be preceded by the word 'please', while the receipt of all reactions should be followed by the 'thank you'. And whenever there has not been the ideal outcome of the interaction, the word 'sorry' helps overcome the impact of the disappointment or failure. These three words are taught to us in the early days at school, but often get forgotten and left out as one grows in life. However, on entering the medical profession, and knowing the value of the human interaction between the doctor and the patient, these three words are a *sine qua non* in the professional etiquette of a doctor.

A successful doctor has been described as having 3 "ables". The doctor must be 'able' (have the technical competence), must be 'available', and must be affable or amiable (diffusing warmth and friendliness). In today's context, I add another 'able', the doctor must be 'affordable'! While the medical colleges have structured teaching to make a doctor 'able', little, if not, nothing, is ever spoken or taught about the other 'ables' that go into the formation of a complete and successful doctor. It is the character of being available and affable or amiable that not only attracts the patients to the doctor, but also sustains the patient contact over long periods of time. Communication with an affable person is easier, and it has been noted that there are less litigation and other medico-legal issues with those doctors who are amiable. The little things of professional etiquette come more naturally to the affable person and this explains the popularity and success that goes with such doctors.

Punctuality is a trait of immense value, and is the key feature of being available for the patient. Nothing is more distressing to the unwell individual, as is the long wait for professional medical help, made longer by the lack of punctuality. There often a tendency to blame the "emergency case" for a delay at an appointment. It is true that an acute medical illness or accident has no timing and very often the doctor has enough cause and reason to 'justify' his delay at an appointment. But a simple communication of the delay to all concerned is what is expected by the profession, and with today's advanced communication systems in place, a cell phone call, a sms, or an email is all that is required. This communication should seek apology for the delay, briefly giving the cause for the delay, as well as inform the likely time of return for the appointment.

Common courtesy and a smile are the main traits of the affable person. The initial greeting is important, and will vary with the ethnic and social background of the patient. A formal 'Good Morning' is a good ice breaker when there is the first contact with the patient for the

day before 12 noon. Between 12 noon and 4 pm the greeting should be 'Good Afternoon' and 'Good Evening' thereafter for the rest of the day. It is to be noted that 'Good Night' is a not a welcome greeting. With the diversity of Indian social cultures, the '*namaskara*' or the '*salam*' are good equivalents for any time of the day. The handshake is not customary in our social fabric, more so with patients of the opposite sex. The end of an interaction or consultation should conclude with a greeting for the period of day that is to follow. It is 'Good day' or 'Good afternoon' as a parting greeting up to 3pm, 'Good evening' up to around sunset or 6pm and 'Good night', for all times thereafter. A short good wish like 'take care', 'all the best', 'keep smiling' or 'see you again', add the personal touch to the salutation of parting.

Professional etiquette at consultation

Now, we come to the actual interaction with the patient and the relatives. It is wise to remember that they are the ones who feel the stress the most. The anxiety of the illness, the fear of what the doctor is likely to say, the worry of the social and economic impacts of this interaction, are all foremost in the minds of the patient and relatives. This makes them edgy, vulnerable and emotionally labile. And the best way to overcome this is to be a **good listener**. Not only will it give you the diagnosis in over 90% of the times, it also helps cement the faith the patient has in the doctor. A constant eye contact with the patient is also important. Distractions (and there can be many, from phone calls, to cross consultations and the like) are best avoided. If possible all telephonic contacts may be screened by the office secretary before being put through. All the aspects of both verbal and non verbal communication should highlight the doctor's response to the patient's story, like the facial expressions of concern and empathy. The doctor's verbal response should be loud, clear and in the language the patient understands the best. Use of technical jargon and medical terminology may sound impressive, but are of no avail as they pass over the patients head and fail to be received or appreciated.

A few other aspects of professional etiquette during the initial consultation relates to the male professional and the female patient. *It is mandatory* to have a close relative of the female patient (husband or father or sister) present during the interview. If there are issues of confidentiality involved, and the male members of the family are to be excluded, a female attendant (the nurse) should be present. These measures are not only needed for making the female patient more comfortable, but are also protective to the male professional against future medico legal allegations (sexual harassment, rape etc).

It is good practice to jot down salient points from the interview, especially noting their chronological sequence. At the end, make a brief oral summary to the patient and get confirmation of all the facts as they have been presented and interpreted. Soft, soothing language and a positive presentation will get better patient compliance. It is essential that many of the fears have been allayed by this time and the patient is ready for the next step of the medical evaluation, the physical examination.

Professional etiquette at the physical examination: 'Good Bedside Manner'

The 'Good Bedside Manner' is of prime importance and is the key step at which the patient makes his assessment of the trust he /she is going to place in the medical professional. Every patient is human and has a right to their privacy and space. As medical physical examinations are an invasion into this privacy and space, it is essential that adequate privacy is ensured. An enclosed cubicle or a space walled off by screens is usually sufficient. There should be enough bed linen available to cover the exposed body areas when the examination centres around other regions of the body. An example would be a sheet to cover the abdomen and chest, and another to cover the lower limbs, with only the gluteal region is exposed for a rectal examination to be done. *For ALL female patients being examined by a male medical professional, there should be a female attendant present ALL*

the time. As explained earlier, this measure is not only needed for making the female patient more comfortable, but is also protective to the male professional against future medico legal allegations (assault, sexual harassment, rape etc).

Follow the set rules of clinical examination of inspection, palpation, percussion and auscultation. Not only are they of a sequence to help you with a diagnosis, they are also of a sequence to the patient. Flitting between these steps in a random order causes a distress to the patient and contributes to poor beside manner. As palpation involves direct physical contact with the patient, the doctors' hands should be clean and warm to the temperature of comfort. The touch should be soft, gentle and with a constant gaze at the patient's face to note the response to the palpation. Over zealous elicitation of pain (tenderness) is definitely NOT appreciated by anyone, as well as repetitive attempts to elicit the same. The clinical diagnostic accessories like the plessor (the knee hammer), the stethoscope and the ophthalmoscope should be clean and in good working order. Ensuring this goes a long way in enhancing the deportment of the doctor.

Though internal examination (rectal, vaginal, or bi digital oral) form the last part of palpation, these may be left to be done at the very end, as the final act of the clinical examination (they should never be forgotten!!). Specific permission and consent (oral) for these invasive examinations, explaining their need and importance, should be sort for and obtained before proceeding for the same. The use of clean, sterile gloves is not only for personal protection, but is mandatory, as recommended by the Hospital Infection Control policies. The proper segregation and disposal of the same, after use, is part of the waste management schedules all medical professionals need to be well aware of. With this setting of the example, many 'brownie points' are awarded to medical professionals' deportment by the support and ancillary staff, for awareness and co-operation in the aspects of medical waste disposal.

Following the clinical examination, the patient is most vulnerable. The two factors responsible are: One is the recent invasion into the privacy and space of the patient by the doctor. The other is the fear and anxiety of what the doctor is going to opine next. Good bedside manner involves good communication skills, and how the medical facts are communicated with gentle firmness aided by a humane touch, and this is the hallmark of the patient's interaction with the doctor. Due time has to be set aside for this part of the consultation…time made up of three parts…..the time taken by the doctor to give a the diagnosis, plan of action, the economics involved and general prognosis, the time for the patient's reaction / response to the doctor's words and the time for any queries, doubts that the patient / relative may have that need to be clarified. Often the doctor is the harbinger of unpleasant news. An emotional response from the patient is only to be expected. And so the doctor needs to be armed with all the communication skills to ally and counter these fear related emotional outbursts. A very positive attitude, comforting cheer and an assurance of all the support are the 'lifelines' the patient would like thrown at them, and this should be done with tact and care. Over enthusiastic and false promises may win the moment, but when they come unstuck, the loss of patient's moral and confidence will only bring down the doctor's reputation for his bedside manner.

Good clinical practice dictates that the doctor now writes out a brief document (a legible handwriting is a bonus!) about the consultation, with special reference to the instructions and medications for the patient. The consultation should conclude with positive aspects of encouragement, empathy and support from the doctor being re-emphasized to the patient. Like many other things in life, it is these final moments that linger with the patient and contribute to their impressions on the manners, etiquette and deportment of the doctor.

More 'Good Bedside Manners': Professional etiquette in the Wards

Much of medical care involves the hopitalised patient. The doctor's

visit is among the key moments of the day the patient looks forward to when the doctor has a good bedside manner, and vice versa, it is the moment of the day the patient detests the most when the doctor has a poor bedside manner. It is again an activity that the medical professional has to set aside time for and do it with regularity and punctuality. For various reasons of convenience, the ward round is best done in the morning, because it allows the rest of the supporting medical team to carry out instructions and care. Ward rounds at other times of the day upset nursing schedules, often miss the time limits for investigations and disturb the patient's sleep, eating or personal hygiene times. However, if the medical condition of the patient so warrants, multiple visits a day may be necessary. Junior medical doctors need to visit the patient more often in a day, to keep track and record the medical progress of the patient.

The aspect that makes the ward round interaction with the patient different from the initial consultation is that, while the latter was a 'one on one' encounter, in the ward round a medical team comes along to see the patient. It is but prudent that there should not be an excessive indulgence of medical discussion in front of the patient. The patient is always looking for clues on the health status and outcomes from all the medical team. Their lack of knowledge, or worse, their half knowledge of medical facts, allow for all the wrong interpretations of what is being said and this very bad for their morale. All medical decisions should be made before or after the visit to the patient in consultation with the whole team and with an update about all the facts of the patient. The prime purpose of the ward round, besides the medical aspects, is to bring cheer, encouragement and the incentive to get better for the patients.

In the general wards, where there are constraints of privacy and space, the liberal use of screens is required to ensure a modicum of the same. As also, the presence of other patients within ear shot, would need softer tones for conversation. The special wards ensure more privacy.

Before entry into the privacy of the room of a patient, it is polite to knock on the door and announce arrival, and then enter into the room only after the nurse ensures the patient is ready to be seen by the doctor. Barging into the privacy and space of any individual is looked down on and is a strong indicator of poor bedside manners.

The interaction of the patient usually follows the line of a subjective assessment, an objective assessment, an analysis of the progress of the patient, and finally a plan of therapy for the day. All along, there should be a gentle handling of both, the conversation with and the examination of the patient. Pain is a critical feature of the post operative patient, and all due thought to this should be exercised, so that the patient is not in more physical pain after the visit of the doctor and team. There is also the component of 'emotional' pain, which is a result of a combination of fear and anxiety. A major achievement of the ward round visit to the patient is the alleviation of this emotional pain successfully. A judicious use of compliments to acknowledge the patient's positive progress is appreciated and taken as encouragement ensuring further compliance with the medical advice given.

Finally, it is important to realize that though the doctor is 'captain' of the medical team, he /she cannot achieve without the active participation and support of all his medical, nursing, paramedical and other ancillary staff. Time spent with the team, clarifying orders and instructions, getting feedback on the patients and a general enquiry into their working conditions and atmosphere form the cement that builds a strong team. While command of the respect of the team is essential, there should never be a fear of hierarchy and this allows all communication lines to be open. Frank team discussion of the various medical problems and challenges should be encouraged and the collective consensus opinion taken into account to plot the medical course for the patient.

Bouquets and brickbats are a part of all human interactions. All compliments should be shared with the team. Professional etiquette

and competence requires the team leader to accept all the responsibility and 'the stick' for all the failures. Correction of errors should be done with tact and respect, without playing the blame game. Within the team, the use of the tripod of common courtesy, a cheerful and open manner, and a firm handling of all situations are the traits of the medical professional with good professional etiquette and deportment.

Conclusion

The whole concept of professional etiquette is the reflection of the medical professional's technical merits combined well with all qualities of decent humane behaviour, revolving around the respect, and appreciation of the patient as another sensitive human being. A similair respect and understanding should also extend to all the other members of the medical team. The untidy, impatient, cold, distracted, rude, haughty, grumpy and insensitive doctor gets the label of a medical professional with a poor bedside manner. On the contrary, a tidy, punctual, warm, attentive, cheerful, encouraging doctor who is full of respect for the unwell patient's feelings, time, space and privacy is recognized by the patient as being a doctor with a good beside manner.

One of the main advertisements of a doctor's competence, ability and qualities is what goes around by 'word of mouth' communication. News of the bad qualities and faults spread like wildfire. The news of a good bedside manner and competence has a slower rate of spread, but this very quickly will reflect in the popularity of the medical professional. In the long run, the subtle qualities of manners, etiquette and deportment are the factors that take the competent medical professional all the way to the top of his speciality.

It is important that patients are treated with respect and courtesy and that all communication and decision making is a two way process. Doctors are busy people and time is precious. However, the small

amount of time required to ensure that basic medical etiquette is observed will be far cheaper than the costly time and effort that may be required to defend a patient's complaint.

Somebody once defined health as, "a crown on a healthy man's head, which only a sick man can see!" I would like to modify this to the context of "manners, etiquette and deportment are the qualities which all patients like to see as a crown on the head of every medical professional".

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3

Empathy and Compassion in Medicine

Dr.V.N.Shrikhande

> *The best and the most beautiful things in the world cannot be seen, nor touched ... but are felt in the heart.*
>
> Helen Keller

The oxford dictionary meaning of the word 'empathy' is power of identifying ones self mentally with (and so fully comprehending) a person or object of contemplation. Empathy is different from sympathy. The word sympathy means sharing in the emotion of the other person's condition. Sympathy is a reflex action. It is an automatic passive response, which lasts only for a short time. If you see a half starved child shivering in the cold it is a natural feeling to feel sad. However empathy is a positive response; it is not a reaction. It comes both from heart and intellect and leads to mitigating the sufferings.

In a car manufacturing industry when one is dealing with inert materials, there is no question of any empathy. The work ethics in the industry is related to produce excellent product for a customer to satisfy his expectations.

Empathy is an essential attitude when dealing with every human problem. A doctor should feel patient's anxiety, embarrassment, fear of pain and fear of death. He has to also at the same time look after the relations and friends of the patients.The doctor must have these qualities but care must be taken that these emotional concerns for the patient should not obscure his objectivity which may harm the

patient. Can medical colleges and books do this work? My answer is in the negative.

The mental frame of a child is usually formed in the first five years of his life when he absorbs his attitude from his parents and people at home If a child sees that the servants at home are treated in an insulting way, the child in later years will pick up the same traits. If he sees that servants are given stale food and stale fruits, the child will learn that servants are inferior human beings. If he sees that worn out torn clothes are given to poor people they will form an impression that poor people never deserve good clothes In short they will never become a good human being. If children are sent to a school in a man driven rickshaw with six children in it they will loose their sensitivity to understand the labor of another human being. A sight of 3-4 fat adults being taken in a cycle rickshaw by a poor man gasping for breath will never allow consideration for the suffering of others.

It is only an exception that a child brought up in an indifferent exploitative atmosphere becomes a good human being by coming in contact with an inspiring teacher who has imparted humane values through his daily behavior. In today's lifestyle when parents have no time for children, they are looked after by servants and brought up in cresches or in nursery schools in an impersonal atmosphere, how can we change these hardened moulds later in life? To nurture human values we require responsible parents and dedicated schoolteachers and a sensitive society.

By the time a child has joined medical school the age has already past 18 years. If a child has been brought up with positive empathetic values in life; he will remain on that path through out his life. However, in this competitive acquisitive world, the temptation to earn money quickly is always the obstacle for anyone to remain on an ethical path. If that doctor is fortunate to work or be trained by an outstanding successful teacher who has conducted himself with noble

values of the medical profession that student is likely to remain on a good path his entire career

With the economic liberalization there is rapid increase in the middle class becoming affluent. The attraction of modern living styles is fuelled by good income, easy bank loans for apartments, motorcars and tempting offers for tourism in India and abroad has created a society full of consumer goods and attractions. Doctors are going to absorb the attitudes of the self- centered society where those in power amass wealth with unethical means. Such a society will not get empathetic doctors.

Dr. Albert Schweitzer, a gifted musician from Germany who became a doctor to serve the neglected black men in Africa, often mentioned reverence for life. A statue of a Negro made by the well-known sculptor Bartholdi inspired him. In that statue Schweitzer saw the helplessness and suffering of the poor and dispossessed black populations in Africa. Bartholdi had also made the statue of liberty, which was erected in the New York harbor symbolizing that America will be welcoming those unfortunate human beings uprooted from their lands. Artists, poets, writers can create empathy for fellow human beings. This work science cannot do.

In my long career of over 50 years, I have practiced several things which have helped not only number of my patients but also have inspired some of my young surgeons to absorb the essence of our noble profession. In the practice of medicine the first consultation is of crucial importance. Patient is always given a full time for him to express himself. I remember as a medical student our teacher telling us "listen to the patient well because he is giving you the diagnosis." With patience and detailed observation we do get valuable hints from the patients as to what he or she is trying to tell. When patient is speaking look into his eyes. He feels assured that you are fully concerned with the problem. That creates a firm bond between a

patient and a doctor. And this was the matter of envy for those in other professions. Unfortunately the art of listening to patient's complaints is rapidly disappearing. We are under the impression that investigations are a short cut to arrive at a correct diagnosis in a short time.

The patient's dignity is to be maintained all the time. When I was working in a government teaching hospital every patient was addressed with his name and not with the cot number or by name of a disease. To call a patient as 'cot no. 9' is dehumanizing. Only people in concentrations camps and jails were identified with numbers. The patient should not be called as a case of rectal cancer or breast lump or strangulated inguinal hernia. Patient's disease is temporary but his name is permanent. He wants to get rid of a disease but retain his name.

No patient was ever stripped of his clothes without the screen surrounding a cot. I was shocked to see in one hospital where I had gone as MS examiner women were examined with breast open without screens and men with scrotal swellings fully exposed to all. I was told that this was a practice followed in that institute. One surgeon told me that patients were very poor and they never complain to get examined in that way. What can this teacher teach his students in human dignity? On my insistence screens were brought in the examination hall immediately.

When rectal examination or vaginal examination is done it is the responsibility of the examining doctor to clean the local part. Patients get extremely hurt when the Vaseline is left in the anal region and the doctor goes away to see the next case.

Every time I had a new batch of students or new residents I would tell them not to cut jokes and certainly not in a language that patients do not understand. Many of our patients do not understand English. And even if some doctor tells a humorist story completely

unconnected with the patient or the problem at hand, the patient is like to feel that a joke is being made at his cost. Patients have natural expectations that any discussion in his presence is about his case.

A proper rapport with the patient is important. Our appearances do convey a lot. I remember many years back a new batch of undergraduates came to our overcrowded ward and the boys and girls were wearing clothes, which will be suitable for an evening party. I had to explain to them that why medical students should look like would be doctors and how useful it is to move with aprons and stethoscopes. I would insist on my residents that they must shave everyday, comb their hair well, and their dress should suit doctors. How can a patient trust a young surgeon to operate on him when he does not know how to shave himself? Any gesture that improves a patient doctor relationship is the basis of empathy.

The most important quality is to prescribe hope to the patients and inspire the team even in difficult situations. Particularly in intensive care my standing instructions are that good reports can be discussed in presence of the patients. If the pathology report is that of a benign tumor show your joy to everybody. If the report is unfavorable the discussions are held outside the room. A serious patient in ICU may not be unconscious and are adversely affected by bad reports. Never tell the patients that we are unable to come to any conclusion. Patients select the doctor after making inquiries about his experience and competence. By no stretch of imagination we should convey an impression that the situation is beyond our comprehension. Our role is that of a leader in crisis. Winston Churchill's statement that we will fight from the land, from the sea, from the air, and destroy the menace of Hitler's Nazi war machinery electrified U.K., which was facing difficulties and defeats. My policy is to inform the patients and the anxious relations we work like people in CID (Criminal Investigation Department), collecting more information to make the picture clear. Our expression should never show our uncertainties and inner anxieties.

The patients and relations should be explained in simple words that they understand the nature of a disease and the treatment. Sketches and anatomical pictures are very useful to explain what is obstructive jaundice, intestinal obstruction, strangulated hernia, fistula in ano. Then they can understand how a gallstone obstructs the CBD and cause pain, fever and jaundice. How a small stone going across the ampulla can lead to acute pancreatitis. Show them the ultrasound pictures and the shadows of gall stones. In describing the severity of the attack of acute pancreatitis it is better to explain to them that it is an extensive burn inside the abdomen than to tell them the various classifications. One village woman was very reluctant to take insulin injections and told the doctor that she can take any amount of medicines. The family physician explained to her that you can make a tired ox work by whipping him for some time but sooner the time will come when he will just drop dead. Likewise by giving medicines the pancreas will work for sometime but it will soon get a bad beating that ultimately nothing will act. The illiterate woman accepted the advice instantly and willingly. It requires empathy to understand their minds what they can grasp without difficulty. What will work to explain a village woman; will fail for a city woman staying in a high-rise apartment.

What we tell is less important than how we communicate

Operation theatre is a frightening place for a patient to enter. The patient does not recognize anybody except the surgeon whom he has consulted. The standing instructions in my department are not to start anesthesia till the patient knows that I am at his side. Music plays a very important role in minimizing the anxiety. Shouting and rude behavior is not allowed. The patient is assured that pain is no longer a problem with the wonderful drugs available in medical practice. If a patient will require catheterization inform him first that he may get a constant desire to pass urine but that is because of the catheter and not retention of urine.

The most important communication is conveyed through the human touch

Before starting an operation I take the patients hand in my hand and assure him or her that everything is going to be fine. Very often they take my hand and place it on the head or chest and with this reassured feeling, they undergo anesthesia.

There is a story told about a leper who had crippled hands and consulted a well-known orthopedic surgeon Paul Brand in Vellore. He very carefully examined his whole body; his anesthetic deformed hands and assured him that the operation will help him. The patient broke down in tears not only because of the hope of a better life but because for the first time somebody took his hands warmly. Earlier even his family members did not do this. His disease had made him an untouchable! Dr Paul Brand's touch was the first human touch he experienced after his condition was diagnosed.

In this era of technical gadgets our practice has become remote control medicine. There is a tendency to have history recorded by the nursing assistants and fed to the computer, patient moves through multiple investigations including ultrasound and CT scans. The experts often treat the reports and not the patients. I remember a patient in Germany who was fully investigated and found that nothing was wrong. She presented a picture of IBS. When I examined her and assured her that everything is fine she told me that was the first time that a doctor palpated her abdomen. Several months later I got a phone call that patient had shown marked improvement after my examination.

A genuine human touch, understanding the patient's anxieties and making every effort to ensure that hope is not destroyed are the basic privileges, responsibilities and opportunities for the medical profession. These qualities cannot be taught in medical colleges alone. One can learn how to read a CT scan, do operations but it is not possible to read or understand the patient without empathy. Medical

educationists are toying with the idea to encourage reading of classical literature, fine arts with the stress of human values to students of medicine. Good human beings who have concern for others become better doctors. This job belongs to the parents, schools and college teachers and society as a whole.

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4

The Art of Consultation

Dr. Kulwant S. Bhangoo

The consultation of the patient is a very important aspect of medical practice as it can have a profound impact on a doctor - patient relationship. In surgical practice, it is also a very important attribute in the patient's decision regarding whether to have surgery or not. Many physicians who are academically excellent may not necessarily enjoy the same practice prosperity as those physicians who are charismatic and are good at the art of consultation. The author presents here many aspects of consultation which are not usually taught in the medical school, but which he has learned over thirty years of clinical practice.

Pre-Consultation

Several things can be done to prime a patient before the actual consultation. When the patient calls for an appointment, the office attendant who first takes that call is very important. The first encounter of the receptionist over the telephone with a patient can have an important impression. Many times patients will try to seek information about the physician and the office before making an appointment. The person who takes the first telephone call should, therefore, be very well versed in all aspects of the practice and should be able to feel what the patient desires. Many patients will ask for brochures about the procedures which they are contemplating. It is, therefore, important to have brochures on the type of services that the physician provides which can be mailed to patients if they so request. These brochures should be tastefully made and provide information about the physician, his credentials and his affiliations with various professional societies and any awards and accomplishments.

Another important input is the decor of the waiting room when the patient comes to the office. It should be tasteful and not opulent. The staff should be very courteous and interact very politely with the patients when they come in. It is always helpful for the staff to talk to the physician before the physician sees the patient. The staff can alert the physician as to the personality of the patient, what they are expecting and also any unusual red flags that may be detected prior to the actual consultation.

Display of Diploma And Testimonials

Patients like to learn as much about their physician as they can. To that end, it is recommended that if there are any diplomas, awards or any medals these should be tastefully displayed. The patients are very impressionable when it comes to what they see in print. Any newspaper publications or any books or publications that the physician has to his credit should be displayed for the patients to see.It is also important to insure that patients do not wait for unduly long periods of time before seeing the physician. This tends to irritate the patients and the consultation then starts off on a wrong footing. In a surgical practice, it is important not to have new patients who are coming in for surgery to be exposed to those patients who have just had surgery. The patients who have had recent surgery are frequently bruised, swollen and uncomfortable, and this can be offputting to a new patient who is coming in for a consultation for a surgical procedure.

Use of Videos And Brochures

While the patients are waiting to be seen, it is sometimes useful to have them review videos of the procedures that they are contemplating. It is also important to have other videos of the services that the physician performs available. This can be an important marketing tool in introducing the patient to the type of procedures that the physician has to offer. Any books or publications that the

physician has authored should be displayed. This has a very positive bearing on the patient's impression of the physician before the actual consultation. It is also useful to have any pictures that the physician may have with celebrities displayed.

Testimonials

In a surgical practice, particularly in plastic surgery, many patients will request to see pictures of previously treated patients. It is, therefore, important to have these readily available as compiled albums. It is very unimpressive to start looking for these pictures if the patient asks for them if they are not readily available.

It is also important to have a list of patients who have had successful outcome and who are willing to talk with patients. Many patients will seek to talk to other patients to find out what their experience about the proposed surgery was.

If any of the staff members have had any surgical procedures and they are willing to disclose that, this can be a very important and effective testimonial to the physician.

Dress Code

It is very important for physician to dress appropriately. The patients almost always notice the physician's attire and all the accessories that the physician is wearing. A well dressed physician will always command more respect that one who is dressed in a shabby manner.

Observers and Other Attendants in the Consultation Room

Sometimes there are other persons in the examining room other than the actual physician. These could include students, interns, resident fellows, and sometimes visitors from other centers. It is important to inform the patient about the presence of these attendants and to get their consent. The presence of students, interns, resident fellows and visitors from other centers is a positive attribute to the consulting

physician as it denotes that the physician is academically oriented and is held in high academic esteem by the onlookers.

Female Patients

When consulting with a female patient, it is very important to have another female attendant, such as a nurse, present. It is also important for a male physician not to undress a female patient; instead one should ask the patient to undress herself or ask the nurse to undress the patient. This is because sometimes the maneuvers during undressing can be mistakenly interpreted as inappropriate gestures by the patient. During the consultation it is important to have the physician at a higher level than the patient. This denotes authority. Also, it is important to make eye contact with the patient during the consultation. It is also important to touch the patient very gently. This denotes compassion. It is also important to listen very carefully to the patient. By being a good listener, the physician can frequently pick up some red flags which are critical in determining whether or not to operate on a patient. Beware of patients who are critical of other physicians or who are very profuse in their praise of the physician. Also, be very cautious about patients who are very demanding. It is also important to assess the degree of the patient's concern as it relates to the extent of the deformity. Patients whose concern is far in excess of their deformity can be difficult patients.

Touching the patient gently denotes a gentle nature and also encourages affinity as far as doctor – patient relationship is concerned. The physician's attitude should be warm, relevant and personal. It is a good idea not to get too involved in personal and social issues when consulting with a patient. The physician's approach should be unhurried. It is important not to give patients a sense of urgency. Sometimes patients wait for a long time to see the physicians and then also wait for a long time in the waiting room before the actual consultation. If, at the end of all that, the physician

dismisses them in a hurried manner, it can have a very negative impact on the patient.

Medical Records

It is very important to document the consultation in as much detail as possible. It can have very important medical - legal repercussions. If a physician is able to draw, this can be a very large positive attribute because patients love physicians who can draw. Making drawings in your charts also denotes that you have taken the time to discuss the issue with the patient in detail and at length. This is important when it comes to drawing the length and extent of the scars, for instance, during a surgical procedure. The physician who is able to draw manifests an artistic aptitude which the patients appreciate.

Notes should be made of any special events or occasions that the patient may mention in passing during the consultation. These include birthdays, anniversaries, special achievements of their own or their children's or relatives. These should be recorded separately and not be made a part of the actual medical records. When patients are seen at a later date, and sometimes years later, then reference can be made to these documented events.

This will immensely impress the patient who does not expect you to remember what they stated months or years ago.

Photographic Documentation

In some specialties, such as plastic surgery, taking pre-operative photographs of patients is extremely important. This is also important in other specialties such as dermatology. The patients tend to frequently forget what they looked like, and many times the pre-operative photographs are important in dealing with dissatisfied patients. They are also of immense medical - legal importance. It is, therefore, necessary to explain to patients the need for taking the photographs. Many patients demand photographs of other patients,

and this can be used as an argument to justify taking photographs. As indicated earlier, it is important to have albums of pre- and post-operative photographs of different procedures available as many patients will demand to see them, particularly in specialties such as plastic surgery.

Digital Imaging

In plastic surgery, digital imaging is used by some physicians. By this method, the physician can demonstrate to the patient what they will look like after surgery; however, this digital imaging is not a true depiction as it is twodimensional and can sometimes be misleading. Also, the patients tend to fixate on the image which was shown to them in the office, and if the surgical outcome is slightly different from what was shown to them, this can lead to disappointment.

Multiple Procedures

Sometimes patients will consult a physician for multiple procedures. This should be discouraged because it has been shown that these patients have very low retention of what is told to them during the initial consultation. This ranges from between 25 to 30 percent. It is, therefore, important, especially for a surgical procedure, to have patients come back again before surgery so that the issues can be reiterated. When patients ask for a consultation for multiple procedures they can sometimes get confused with regard as to what is said to them about the various procedures.

The Presence Of Other People During The Consultation

It is important to have only one relative of the patient be in the examining room at the time of consultation. Having many people in the consultation can make the patient uncomfortable. Also, there is a tendency for the on-lookers to interject questions, sometimes inappropriately. It is also important not to have consultation with more than one patient at the same time. This sometimes can result in misinterpretation and confusion.

Financial Issues

It is important to discuss the financial issues with the patients in detail.

They should be very specifically discussed either by the physician or by the physician's staff. Personally, the author prefers not to discuss finances with the patients, but has the patients discuss it with a staff member. All issues should be very clearly documented to avoid any ill feelings later. A policy should also be formulated and discussed with patients with regard to what the financial implications will be if they needed to have revisional surgery.

With revisional surgery, the financial issues with regard to the surgery itself, anesthesia, operative time and if any implants are required should all be clearly discussed with patients at the time of the consultation.

Body Dysmorphic Syndrome

Body dysmorphic syndrome is emerging as a bothersome issue, particularly in plastic surgery. These are patients who have a distorted image of their own body. It is very important to recognize these patients during the consultation. These patients have excessive concern about the deformity they have. Frequently the patients do not have any deformity but express concern about it because they have a distorted image about themselves. A classical example is a patient who is anorexic and feels that she is overweight.

Red Flags

Beware of patients who have excessive concerns which are out of proportion to their deformity. Also beware of patients who are excessively talkative because they are not listening to what you are saying. Beware of patients who are inattentive. Patients who are

unkempt are usually not compliant with post-operative instructions. Patients who are excessively demanding can be difficult to manage post-operatively. Patients who are critical of other physicians and who condemn other doctors should be treated with caution. Likewise, those patients who indulge in over-praising the physician should also be treated with some reservation.

Medical - Legal Implications

During a consultation, especially on a patient who has had previous surgery and is dissatisfied, it is important to be very careful about any comment that a physician makes on the results. Any comments that are made during the consultation can be taken as a derogatory impression of the previous surgeon's work. Sometimes even facial expressions such as raising an eyebrow can be construed by the patient as an indication that the physician is condemning another surgeon's work.

It is very important to get fully informed consent when performing any surgery. The patient should be appraised of the nature of the procedure, alternatives, risks, complications and limitations. The informed consent should be witnessed by a member of the office staff.

Documentation

The need for detailed and accurate documentation during the consultation cannot be overemphasized. Documentation is important not only from a medical standpoint in that if a patient returns at a later date it is important to find out the details of the procedure done. It is also important if the patient should be treated by another physician who will need to know exactly what treatment the patient had. It is also extremely important from a medical - legal standpoint if the case goes to a trial. What is written in the chart takes precedence over any hearsay testimony. Of all issues with regard to

consultation, the most important factor is adequate documentation.

In summary, possessing academic knowledge is very important but the ability to convey to the patient that the physician possesses that knowledge and has the aptitude to use it is also important. This is usually conveyed during consultation.

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5

Assessing and Responding to Patients' Personality

Professor K.R. Sethuraman.

Carl Jung is credited with the theory that every individual can be categorized as a psychological type. He believed that there were two basic kinds of "functions" which humans used in their lives: how we take in information (how we "perceive" things), and how we make decisions. He believed that within these two categories, there were two opposite ways of functioning. We can perceive information via 1) our senses, or 2) our intuition. We can make decisions based on 1) objective logic, or 2) subjective feelings. Jung believed that we all use these four functions in our lives, but that each individual uses them with varying frequency. The function which someone uses most frequently is their "dominant" function. Jung defined eight personality types based on permutations of the following three dimensions of personality: Introversion/Extraversion, Sensing/ Intuition and Thinking/Feeling.

While psychologists have attempted various ways of classifying personalities, for day to day clinical practice an awareness of common personality types is adequate.

The following list is based on intuitive approach based on "common sense". Once a novice doctor-in-training gets the feel of picking up patient personality and fine tuning the doctor-patient relationship, further refinements could take place.

Common Patient Personality types -

Superior Type

Thumb nail: Arrogant, snobbish; feels invulnerable and often denies that disease can harm; feels imporant about self.

Doctoring Tactics

Acknowledge patients worth in his/her own field of expertise. Then they may appreciate you a bit more.

Maintain adult to adult type of conversation and transaction.

Strongly affirm your own expertise (and limitations) especially when challenged or accosted by the patient on the credibility of your advice.

Avoid `Parent-Child' transactions. It puts such a patient off and they may just walk out of the room.

Dramatizing / Hysterical Type

Thumb nail: Dramatizes symptoms; may deny or repress facts (or diseases); filtrations and seductive; has underlying insecurity and needs reassurance.

Doctoring Tactics

Be generous in reassurance, support and compliments to the patient.

At the same time however, discourage any emotional involvement.

Allow patient to discuss his/her fears and concerns freely.

Help distinguish facts from fantasies.

Guard against any unprofessional response to flitration or seductive appeal.

Impulsive Type

Thumb nail: Demands quick and easy solutions to problems; has low threshold for frustration; often appears childish in outlook and aggressive or rebellious in behaviour.

Doctoring Tactics

Set firm limits - Do not permit undue expectations.

Hold the patient responsible for impulsive actions.

Avoid open confrontations as it may lead to unpleasantness and exchange of angry words.

Avoid humour, jokes, etc.

Silent, Reclusive Type

Thumb nail: Shy, aloof, non-communicative, reticent and detached.

Doctoring Tactics

Respect the patient's need for privacy.

Be friendly and empathetic but do not expect him/her to respond. It is against their character to do so.

Play 'nurturing-parent' role and see if it works to open up the patient.

Masochistic Type

Thumb nail: Long-suffering by own admission; sees the present illness as one more episode of life-long occurrences of unpleasant events.

Doctoring Tactics

Do not avoid them - it aggravates sickness and suffering.

Avoid reinforcing the sick-role! Use non-offending type of light humour or inspiring real life stories relvant to the problem.

Set limits of care and responsibility or they may end up dependent on you.

Support and guide family members who must deal with masochism all the time.

Maintain an adult to adult type transaction; 'Nurturing parent' role may worsen the illness related behaviour.

Suspicious Type

Thumb nail: Paranoid about being harmed, exploited or taken for a ride; generally blames others for their illness and other problems.

Doctoring Tactics

Be friendly and open.

Maintain an adult to adult relationship in all transactions.

Avoid humour and cryptic comments.

Inform all options fully.

Acknowledge the need for circumspection and critical analysis. Be Firm in Your Rebuttal and Refutation (based on facts).

Dependent Type

Thumb nail: Such patients have insatiable needs, are overly dependent on their doctors to solve all their problems, abd tax their doctors to the point of creating genuine anger or frustration.

Doctoring Tactics

Show readiness and willingness to care for them.

Interact in a direct and open way - "adult to adult". Try to avoid 'parent-child' transactions as it aggravates dependency.

Set limits (time, availability, areas of health care, etc.)

Avoid direct confrontation but turn responsibility for their behaviour back to them.

Persuade them to be more autonomous and independent; in chronic conditions like asthma, start by giving minor tasks of self care and encourage then further.

Orderly, Controlling Type

Thumb nail: Overriding need for control of their problems by themselves; see their body parts and bodily functions as `objects' to be under their control.

Doctoring Tactics

Inform methodically the nature of illness, treatment options, etc.

Include the patient in decision making.

Encourage patient's strengths to make them responsible for self-care.

Make them feel they are in control of their illness or disability.

Clearly inform of events or functions that cannot be controlled by volition.

Understanding personality types is helpful to appreciate that every patient is different and has a unique personality. Everyone has a set of values, special strengths and qualities, and that everyone should be treated with care and respect.

Further Reading

Internet Link URL: http://www.personalitypage.com/high-level.html (accessed on 31-01-2008)

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6

Computers in Medicine

Dr. K Lakshman

To err is human, but to really foul things up requires a computer.

Introduction

Computers are ubiquitous. The information technology (IT) of the last two decades is a movement that is on par with renaissance or the industrial revolution. The IT revolution has not spared healthcare industry. It is essential for healthcare professionals to understand the use of computers. They need to keep in touch with and update themselves about the developments in IT industry.

Computers make it easier to do a lot of things, but most of the things they make it easier to do don't need to be done.

Andy Rooney

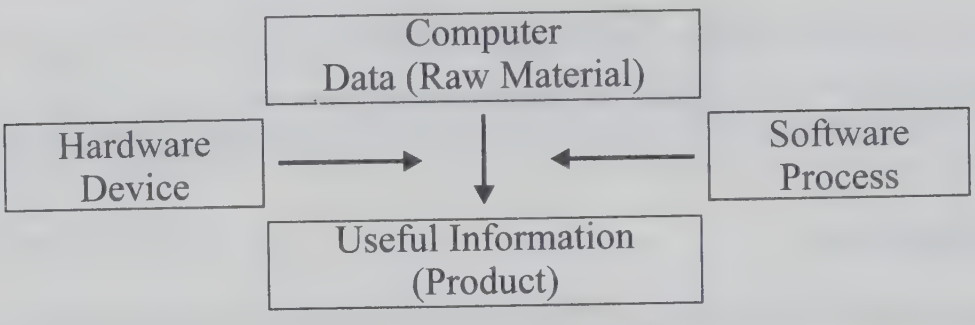
This chapter deals with the use of computers by healthcare professionals and healthcare industry. The interaction occurs for a professional at two levels: (1) how can a professional harness the power of the computer as an individual? (2) How does IT impact work practices for the professional? These questions These questions are answered at a simple, practical level in this paper.

Healthcare professionals of today are using IT concepts even if they are never near a computer, because, most medical equipment we use have 'computers' and embedded software running in them, and, we may not realize this at all!!

This paper focuses on the use of computers by healthcare

professionals and does not cover the workings of IT gadgets or medical equipment.

General features of a computer



A computer is any machine that can accept data in a prescribed form, process this data and supply the results of this processing in a specified format as information or as signals to control automatically some other machine or process.

The main purpose of this machine called the computer is to process data. The machinery capable of accepting this data is called the hardware. The set of instructions residing in the hardware telling the machine to process the data in a particular fashion is the software. The end result is an output of useful data; this usefulness being pre-determined by the user.

The computer, contrary to popular belief, is neither a thinker nor a wizard. The person writing the instructions to the computer (the software engineer) is the real thinker. The computer only carries out a series of steps given in the software; mechanically, but with great speed and accuracy.

One thing a computer needs to work with is accurate data. If inaccurate data is put in, inaccurate results are churned out! Not only should the data put in be accurate, it must also be in a particular form, as determined by the software programmer. This requirement can be tailor made for each user, if need be. One good 'side effect' of this

requirement is the efficiency that creeps into the collection of data. This has an overall positive impact on things like record keeping, accounts, projections etc. in a hospital.

Once proper data is put in, the computer is very versatile in dealing with the data in different ways. It is also very fast in doing repetitive functions and has a much larger capacity than say, the human brain, in storing, processing and 'remembering' data.

Output of data is not the only function of computers. Still pictures, movies, sound files and moving machines like robots are all handled by computers. The process wherein sound and picture formats are converted to forms that are handled by computers is called 'digitization'

The commonly used PC is a 'digital computer'. It deals with the processing of static pieces of numerical data that do not change over a period of time. In contrast 'analog computers' deal with data that changes over a period of time. 'Hybrid computers' are a combination of digital and analog computers. Are you confused? Don't worry, so am I !! Suffice it to say that the PCs you and I use everyday are digital computers.

Computer Lingo

The first thing that confounds all of us is the terminology used by computer professionals in describing the computer and its various uses. This jargon puts most of us off from using the computer. Hence I have included brief, informal definitions of the commonly used terminology regarding computers. The words are arranged in an alphabetical order to allow ease of search.

Binary – with regard to pairs; applies to numbers denoted as 0 and 1; the kind of notation of numbers that computers understand.

Bit – is an acronym for **B**inary dig**IT**. It is extended to the actual

representation of the binary digit in the computer memory or a pulse in the electronic circuit.

Board – the rigid rectangular sheet of insulated material on which the 'integrated circuit' is mounted.

Bus – also called the highway – is a channel along which signals travel in a computer between sources and destinations.

Byte – is a set of bits. Usually represents 8 bits and represents a character. Transfer of information between the central processor and the peripherals take place in 'groups of bits'; the byte mode.

Cache – memory is a high speed buffer memory that sits between the processor and RAM – needed in high speed processing

Central processor – is the main 'chip' that carries out the calculations and processes of a computer.

Chip – is a part of a semi-conductor which forms the substrate carrying the circuitry of the computer.

Configuration – the specifications to which a computer is built ; refers to things like the speed of the processor, the capacity of the hard drive etc.

CPU – the central processing unit that carries the 'mother board', the sockets for daughter boards, the storage devices and the power unit.

Digitization – a process that converts physical form into a coded digital form capable of being handled by the computer.

Floppy Disc – a storage device that has capacity to store data through electromagnetic encoding; the storage is in an orderly fashion on tracks on the disc.

Giga byte (Gb) – is 1000 mega bytes or 10^9 bytes; this is also called billi byte

Hard Disc – a rigid disc fixed in the computer; a storage device like the Floppy disc but with a much larger capacity.

Integrated Circuit – a circuit in which all the components are chemically formed upon a single piece of semiconductor material. Present day 'third generation' computers use this. Earlier versions of computers used valves and transistors.

KBPS – Kilo bytes per second – the rate at which modems transfer data.

Kilo byte (Kb) – is 1000 or 10^3 bytes

Mega byte (Mb) – is 1000 Kilo bytes or 10^6 bytes

Memory – refers to the internal store of a computer that holds data and that can be addressed by the central processor.

Modem – MOdulator / DEModulator – a device that enables data to be transmitted over long distances; usually over telephone cables.

Monitor – a display device with a Cathode Ray Tube – like a Television tube.

Multimedia – a system capable of handling more than one medium; like, still pictures, text, sound and movies.

PCB - Printed Circuit Boards – a board on which a printed circuit is etched and into which chips are inserted by means of pins.

Peripherals – machines that can be operated under computer control eg., printer, scanner.

Port – any socket in a computer to which an input/output device can be plugged.

RAM - random access memory – memory into which data can be written and from which data can be read.

ROM – Read only memory – refers to certain Chips and CDs that have data that can only be read and not written to.

Scanner – is a device that 'reads' documents and surfaces of objects and digitizes the picture.

Semi-conductor - is a substance like silicon whose electrical conductivity varies between that of metals and insulators depending on temperature.

Speed – of the computer refers to the speed with which the central processor can do calculations. It is measured in Mega Hertz (MHZ) units.

SVGA – Super Video Graphic Adapter - outputs images to the monitor from the processor.

UPS – Uninterrupted power supply – a battery backup that prevents data loss in computers even if the power supply is cut off.

VGA – Video Graphic Adapter – outputs images to the monitor from the processor.

Voltage Stabilizer - a device that corrects the fluctuations in the voltage of the supplied current and prevents damage of the computer.

Computer Configuration

To err is human and to blame it on a computer is even more so.

The specifications of the various components of a computer are together called 'configuration'.

Configuration depends on the function that is expected of the computer. For a healthcare professional, this would mean that the computer is capable of running a 'heavy' multimedia presentation, having a high speed internet connection and managing quick

calculations and running queries in databases with a good processor speed. It must also have a good storage capacity for data.

The IT hardware industry is an industry in flux and churns out products at a phenomenal rate. Gadgets become outdated very soon. With these limitations, the present computer configuration for a healthcare professional could be the following:

Part	Characteristic
Processor – Dual capability	3 Giga Hz speed
RAM	1 Gb
Hard Drive	120-160 Gb
Floppy Drive (optional)	1.44 Mb 3 ½ " Disc Drive
Key Board	104 Keys
Monitor	17 " – 19 " Colour
USB ports (4 Nos)	High speed USB 2
DVD Writer	Combo – reads/writes CD also

Part	Characteristic
Multimedia	64 Bit Sound card and speakers
Mouse	2 Button / 3 Button
Modem	Broadband
Bluetooth/Wifi	Enabled
Slot for mobile internet	Present (Laptops)
Printer	Medium range inkjet printer
Batteries (Laptop)	3-4 hour duration
UPS	0.5 KVA – built in batteries

This configuration is but a general guide. I would recommend a thorough market survey and a discussion with a computer savvy person, basically defining what you want to do with the computer, before you make a final decision on the configuration.

Should one buy a laptop or a desktop? The configuration should be about the same for both; Prices of laptops are showing a constant

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downward trend. However, for a given configuration, a desktop is about 25-30% cheaper than a laptop. Also, it is difficult to repair laptops. Having said this, if one's budget permits it, I would still recommend one to go for a laptop because of its portability. A large part of our work involves presentations and updating patient data and portability is a major plus point for these.

Serious uses of computer

> *Writing is the only thing that, when I do it, I don't feel I should be doing something else*
>
> Gloria Steinem

The computer of today exhibits 'convergence' – which means that, it is much more than a data processing machine. It has multimedia capabilities. This capability enables it to run games, music, movie pictures and TV programmes. In short, it is a business and an entertainment gadget.

I have restricted this paper to the 'serious' uses of a computer. This includes word processing, spread sheet functions, database function, Presentation packages, Picture and movie editing, Email, Internet and Medical education.

As you can see, this is a long list and constraints of space force me to give you a brief overview of these uses of a computer. I have also described the use at a practical level; basically explaining how I put to use each of these functions of a computer in everyday life.

Word processing

A word processor is a fancy typewriter. Text can be typed into the computer and reviewed on screen before getting a print out as a hard copy. This enables ***CORRECTIONS*** of spelling and grammar. In fact, the computer automatically corrects many mistakes. And, many times it highlights wrong spellings and offers a selection of words with correct spelling. Use of ***THESAURUS*** is another advantage.

Repetition of words is avoided and ones' vocabulary improves with the use of thesaurus.

Sections of text can be ***INSERTED, DELETED OR MOVED*** at will. This is a major advantage as repetition of typing is completely avoided. Sections of text can be written at random and then moved into the right place in the end to complete a document.

IMPROVING THE APPEARANCE of the document helps in gaining and keeping the attention of the reader. Changes in the type and size of font, formatting sections and adding embellishments like underlining, boldface, italics or adding borders and shading help in making the document attractive.

Other ***EMBELLISHMENTS*** include the insertion of tables, text boxes and pictures. This convey information in a compact and focused manner. They also help draw the attention of the reader.

MAIL MERGING is a facility used to send the word processed documents by mail to many recipients. Personalization can be obtained by inserting fields from a database into the main document, making it look as if each of the recipients got a specially written document. Automation ensures speed and efficiency in sending such merged documents.

Dr. K. Lakshman *FRCS*

Yours Sincerely,

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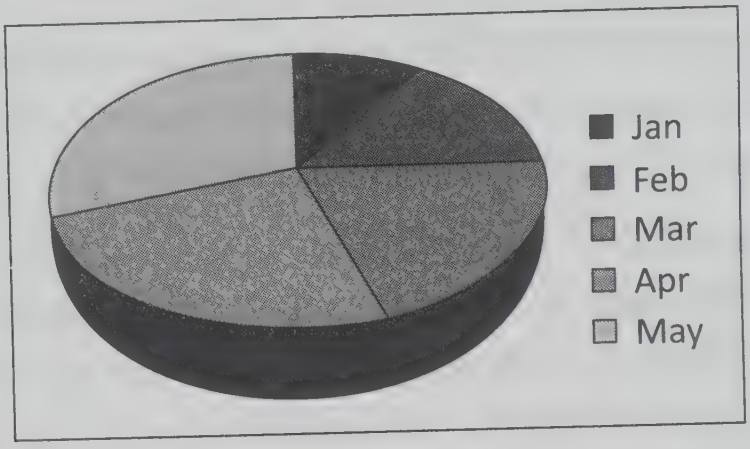
The format of a document with specified fonts, lines, colour scheme etc is stored by the computer as a ***'TEMPLATE'***. One can have templates for a letter head, a standard letter or a standard report. These templates take away the monotony of having to type in the same information repeatedly. The following are examples of letter head templates:

Thus word processing can be used for activities like writing letters, articles, theses or even books. The versatile nature of the programme simplifies the job at hand.

Spread sheet



A spread sheet is a large ***CALCULATING SHEET***. It has several 'cells' which contain information either as text or numbers. The cells are arranged in rows and columns, giving a large calculating sheet. The spread sheet is basically designed to have calculations which may range from simple additions, multiplications etc to very complex formulae. Hence spread sheet function is essential in any kind or research requiring calculations. The advantage in the sheet is that values can be changed in the data cells at will; the calculated values automatically change in accordance with the formula keyed in. Thus a spread sheet is very useful in ***PROJECTING DATA*** for different situations.

Spreadsheets also produce very ***ATTRACTIVE GRAPHS*** from the

data available from within the sheet. The picture at left shows a typical pie chart generated from a spreadsheet.

They also serve ***BASIC STATISTICAL FUNCTION*** like calculating the mean, median etc. Finally, spread sheets also serve ***BASIC DATABASE FUNCTIONS*** like storing addresses, emails and telephone numbers. Sorting and 'find' functions can be used on spread sheets to locate data.

I use a spread sheet for my accounting. I also have basic contact details of my friends and associates on a spreadsheet. Several protocol data are put on spreadsheets and, typically, all graphic representation of data in my presentations are generated by a spreadsheet.

Data Base

Databases are what computers are about. Database function is the most important aspect of the functioning of a computer; unfortunately, it is also the aspect of a computer that is most difficult to understand.

In the field of medicine, various aspects of patient care like outpatient or inpatient registers, case records, laboratory reports, discharge summaries, billing etc. can all be managed efficiently using database programmes.

A database, by ***DEFINITION***, is a file of data so structured as to allow the user to write to it or draw data from it, without altering the file design or its content. The design of the file is determined by the professional writing the programme, depending on the needs of the user. This basic structure remains unaltered. Data are entered into this file in the structured format. Other components draw from this basic file/s and manipulate the data to produce reports as requested.

A database is not one file but a series of files interrelated to and

interacting with each other. The programme does everything to put this group of files together and make them work. The whole system is called a Database Management System (DBMS).

Certain ***BASIC TERMS*** used while planning, building or using a database have to be learnt for the proper use of a database. In the following section I give a brief overview of some of the terms used in a database.

Field - Each item of data gets entered as one item; this item can be independently handled by the DBMS; each such item is called a 'field'.

Record- A collection of fields of data usually referring to one basic unit, like one patient, is called a record.

File- A file refers to a collection of records.

Database- A full database will have several files pertaining to several records.

Form- A form is a screen seen on the monitor with each of the fields of a record being shown. It is used for the entry of data.

Control- A control is a marker attached to each field; the DBMS 'manages' the data by manipulating controls.

Data entry- This essentially refers to the entry of data into each field; the fields can be formatted to accept only certain types of data in a defined format. This prevents the operator from entering inappropriate data.

Table- The starting point in the building of a database is a table. The table has all the fields with their definitions stored in it. The forms are built based on the tables designed for the database.

Query- Most reports are based on queries; these are processes where questions are formed for the DBMS to answer; this process is used to select the required records. For e.g. the query may be to select all names starting with the letter N. In answer, the DBMS retrieves all such records satisfying the requirement specified in the query.

SQL- Structured Query Language; a particular way in which the queries have to be presented to the database for it to understand and carry out the selection process

SQL Grid- MS access has made this simple; a grid is presented to the user and he can type regular terms rather than SQL; the programme converts this into the required SQL format.

Macro- several functions can be automatically carried out by defining functions called macros; by defining several steps in a macro a whole function can be carried out. For e.g. a macro may be made to open a particular form, go to the 'date field' and enter automatically the given day's date. Macros can be made to do several things like make data entry easy, carry out common queries etc.

Report- A report is the end product most often seen and used by the customer. It is a printed form of the results of a query. The whole report can be formated to not only give accurate data but also present it nicely.

While ***DESIGNING AND BUILDING A DATABASE***, one starts from what outputs or reports are required by the organization. The healthcare professional's input in this regard is very important. He sits with the software professional and jointly decides on the structure of

the database based on the required reports. The forms are then designed as are the 'queries' which select out the required records. Reports are then generated based on the queries.

I use a ***DATABASE*** programme for my in ***PATIENT DATA***. Shown below is the screen shot of the 'switch board' of the database.

I use the data generated from such a database to have an audit on the types of cases I do and the complications I face. I keep track of the hospital dues for the work I have done. I have gleaned data from this database on a regular basis to produce scientific papers for presentation at various fora. Importantly, I have a record of the work I have done and this gives me confidence in facing medico-legal situations.

Databases can be customized to store many kinds of data. The fields, links, sorting and queries change according to the kind of data stored. Thus I have a database of my ***REFERENCES*** sorted on the basis of the organ system. For e.g. All papers on the appendix are in one group. I can search on the basis of key words and check the summary on the article in the database or go to the full text article through a hyperlink inserted in the database itself. I also have a database of my ***AUDIO COLLECTION***. In this I can select out songs based on ragas or a singer/performer. Thus the potential to use the database function of a computer is enormous.

No work on database function is complete without mention of Electronic Medical Records (EMR) and Hospital Information Software (HIS). I give a very brief introduction to these entities below.

EMR

EMR is a collection of patient data in an electronic form; Basically it is a digital patient record. It is much more than a simple digital

replacement for a paper record because it can store several kinds of data in addition to text information like digital form of the patient's x-rays, recording of an operation etc. It offers several advantages to all the players concerned in health care.

To a ***PATIENT,*** it offers the capability to store his medical information in, for example, a CD or a flash card, He can refer to it at some future date without having to go back to the hospital and it enables him to get different professional opinions.

The ***DOCTOR*** benefits in that it documents his work and these data can be efficiently and quickly searched and accessed at any time. It helps in his research and teaching activities. It protects him medico-legally as he can show and justify his actions. It also helps him to audit his work and constantly improve his performance.

EMRs help an ***ADMINISTRATOR*** audit a doctor's work! It helps him plan investments in a rational way and in the long run cut costs through efficient use of personnel and inventory control.

A ***PAYER*** like an insurance company is benefited because of the accuracy in the claims that are presented to him. He can verify these claims and it can be done fast.

Besides these ***ADVANTAGES*** to the healthcare industry, EMRs ensure a basic requirement of data entry Viz., Accuracy of data entry / Validation, Completeness of data entry, Legibility, Accountability of data entry, Easy and fast search, Data storage, Data access and Data transfer.

HIS

Hospital Information Systems are the 'in' thing in healthcare industry. Apart from EMRs which form a part of the Clinical Information System, HISs incorporate several database subsystems as follows:

Clinical Information System (CIS)

Financial Information System (FIS)

Laboratory Information System (LIS)

Nursing Information Systems (NIS)

Pharmacy Information System (PIS)

Picture Archiving Communication System (PACS)

Radiology Information System (RIS)

Detailed description of these components is beyond the scope of this paper. It must be remembered that interoperability and scalability are the two key concepts while building a HIS. Compatibility between different computer operating systems and software is a major concern in the industry. Data collated in one system may not be 'read' in another system. Hence various standards are put in place. One must ensure compliance with these standards like HL7, HIPAA, LONIC, DICOM etc. (these acronyms are mentioned only as a means of introduction to the concept of standards) before one chooses a HIS. All these components need not be installed in one go. Scalability refers to modular or step-wise installation of these components. It also means that newer versions of the components can be installed. A healthcare professional must be aware of these basic issues before choosing a given HIS for his facility.

Presentation packages

Presentations are a part of a working doctor's life. You may not be a teacher; but you will certainly have some message or information to convey to your colleagues and patients. The very same information can be conveyed in an effective and impressive manner if you learn the art and science of presentation. Of course, presentations can be just verbal, in the form of written material, through slides or transparencies or by the use of computers. Computer presentations are known to be the most effective form of communication.

The principles of slide making and giving a presentation are beyond

the scope of this paper. It must be remembered that the purpose of any presentation is to grab and retain the attention of the audience. The next purpose is to give information in a short, succinct and effective manner so that that information is understood and retained by the audience. Computers offer several ***ADVANTAGES*** in achieving these goals:

1. Customised backgrounds and logos make the presentation unique and help build 'brands'.
2. Heightened font characteristics help draw the audience's attention to particular aspects of the presentation.
3. Still pictures convey the meaning of a 'thousand words'!
4. Incorporation of sound and movies adds to the quality of presentation.
5. Animations and annotations help in maintaining and enhancing the 'story sequence' of the presentation. This sequence is essential to help retain audience attention.

There are some disadvantages that one should be aware of in using a computer presentation. Some care and diligence ensures that these are circumvented. Of course, if one is using a laptop, these become inconsequential. The aspects one should ***BE CAREFUL ABOUT***, include

1. Compatibility between presentation packages and their versions in different computers. Some presentation that works on your machine may not work in the auditorium you are giving the presentation in!
2. Non availability of fonts on different computers – this is particularly important if fancy and unusual fonts are used in a presentation. If such fonts are not installed in the auditorium computer, either the formatting can be lost or, worse, only gibberish may be seen on the screen.

3. Incompatibility in movie players and compression codes – these stall playing of movies in a presentation
4. Transfer of presentation – those with graphics, movies and sound bytes can be very large files. Carrying them between computers may be an issue, even though, DVDs and large capacity pen drives of today have circumvented this problem.

Presentation packages are very versatile and powerful communication media. A lecture forms but one small part of what can be done with such packages. We have effectively to produce:

PATIENT INFORMATION MODULES in the form of Frequently Asked Questions (FAQs) on subjects like endoscopy, cholecystectomy etc. Patients can see and learn about these subjects while waiting in the waiting area. This keeps them busy while waiting and primes them about what to expect during the consultation / procedure.

PRESENTATION WITH VOICE-OVERS – These are used as teaching modules for trainees. Students can listen to the lectures several times at times and places of their choice. They can also pace the learning process to suit their learning capabilities. Difficult concepts can be read/heard through repeatedly. This helps them comprehend better.

INTERACTIVE QUIZ – A Quiz is a form of 'fun' learning. Little snippets of textual or graphical data are presented to the learner. Questions in the form of multiple choices are given for the learner to choose the answer from. This form of questioning covers large areas of knowledge and testing the depth of knowledge can be controlled by the type of choices given. Scoring can be built into the system for self evaluation. Knowledge is disseminated by eventually giving the correct answer with explanations and references.

TEACHING MODULES – Presentations can also be used to

build complex hyperlinked teaching modules based on adult learning and problem based learning principles.

Presentations and their applications thus form a strong tool for the health professional in teaching.

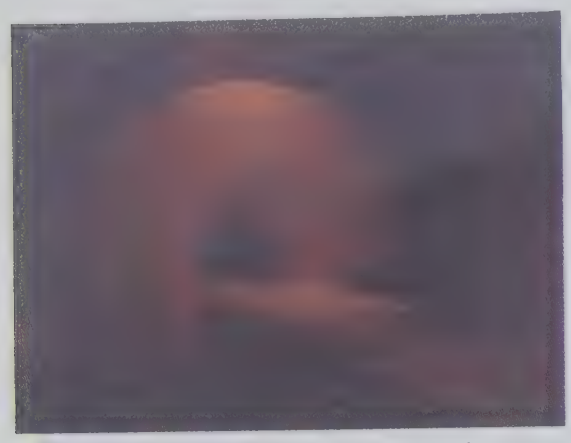
Picture and Movie editing

STILL PICTURES can be enhances by computers. Documentation of clinical material has become very easy with digital cameras. Older print films can be can be digitized by using scanners. These digitized pictures can be enhanced by cropping (a process of 'taking away' unwanted parts of the picture), balancing (a process of increasing brightness, colour and hue) and adding embellishments like adding shadows, blurred edges, creating shapes and using special effects.

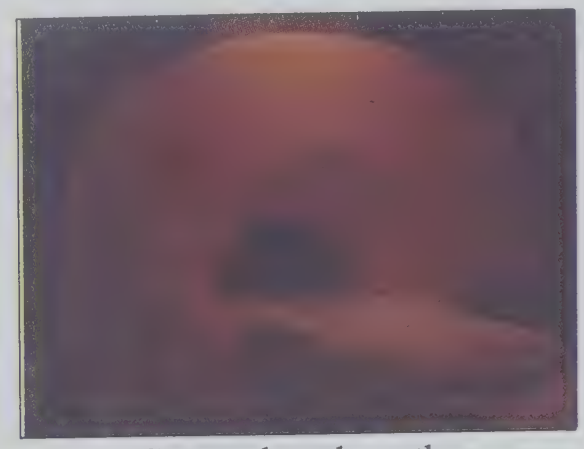
One needs a special picture modifying software like adobe photoshop or Corel draw for doing this. These modifications add quality to presentations and documents. I have given ***EXAMPLES OF SUCH MODIFICATION*** below. It is the same picture looking so different!!

In addition to modification, pictures can be overlapped and annotated for effect. This is particularly useful in bringing out brochures and created special backgrounds for presentations.

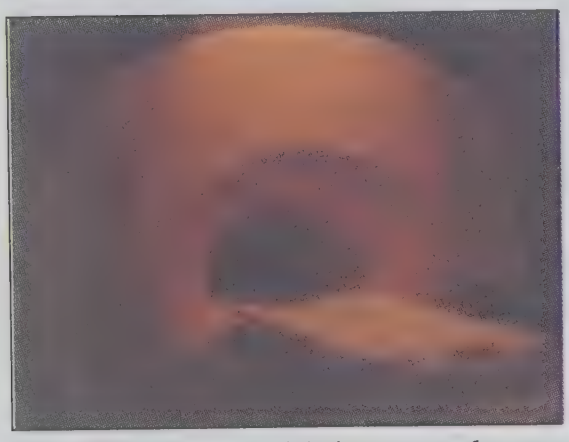
DIGITIZED MOVIES are also used extensively for documentation. Analog outputs from VCRs and older endoscopic (laparoscopic) cameras can be digitized using digitizing 'cards' in computers. The newer cameras and scopes produce digital outputs. These digitized images can be edited using special video editing software. Unwanted clips can be removed. Enhancements like transitions can be introduced between clips. A voice over can be recorded as a commentary. Titles and annotations can be introduced. It is possible to produce, with a little bit of practice, a professional looking 'movie' sitting at home using your computer.



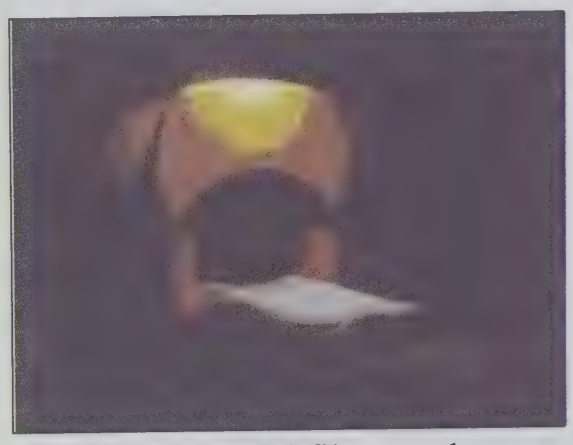
An Unedited picture of
MRI Scanner (Raw picture)



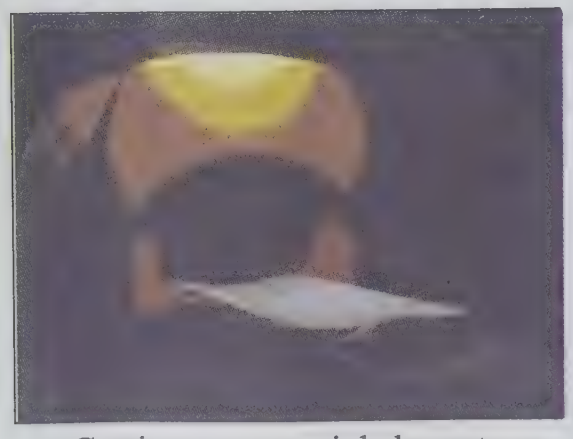
Cropped to show the
main scanner



Enhanced with improved
brightness and contrast



Use of special filter to alter
the appearance (artistic)



Cutting to a special shape to
enhance effect

Email

Electronic mail- ***EMAIL*** - is a versatile communication tool. Email clients like Outlook, Pegasus or web based clients like Gmail or Hotmail can be used to write and receive mail. Classically these programmes work with the following components:

Inbox which holds all incoming mail

Outbox – holding outgoing mail before it is actually sent,

Sent mail box that holds a copy of mail that has been sent

Deleted mail box which can be later purged to remove unwanted mail permanently

Junk mail box that holds mail filtered out as 'junk' mail.

Apart from speed and accurate 'posting' of mail, email offers the following ***ENHANCEMENTS:***

Facility for ***GROUP MAILING*** – I have special group mailing lists – for example – my registrars, my residents or my consultant friends. I send relevant and appropriate letters or documents off to these special groups at the flick of a button.

Ability for ***SENDING ATTACHMENT*** – any digital document – a text letter, a presentation, a picture or a movie – can be attached and sent to any recipient with an email ID. The downside is that larger files may take very long to send and the recipient's email client may not have enough space to receive very large files.

Practically most of the present day communication is through email. Security and authentication are issues that are still being debated. But electronic signatures are increasingly being accepted as authentication.

Internet

> *Internet is so big, so powerful and pointless that for some people it is a complete substitute for life.*
> Andrew Brown

The internet is a powerhouse of knowledge. This is the single most important phenomenon ensuring a 'level playing field' for citizens of the world. Armed with an internet connection each one of us can hope to perform to the best of our potential.

It is impossible to cover all aspects of the internet. I will summarize by listing the common uses of the internet as I see it.

GENERAL KNOWLEDGE – many times I use the net to help with school/college projects of youngsters.. As examples, I helped in writing about varied subjects like, Egyptian Mummies, The history of chocolate, Airlines of the world, Currencies of different countries etc.

It is very common for us to check on holiday destinations; the weather, the best time to visit places, the travel requirements etc. on the net before we make bookings.

It is routine for me to get news from the net; it may be specific sites like BBC or CNN or it may be from news pages of Google or Yahoo search pages.

GENERAL USES OF THE NET – My banking is almost exclusively on the net. The only visit to the bank is to deposit cheques. Account information, payment of credit card bills, utility bills, requests for cheque books are all done via the net.

Airline and Bus tickets, hotel accommodation are done easily through the net.

One can get interesting clipart for illustration from sites like Clipart warehouse - http://www.clipart.co.uk/index.shtml.

Special effects for letters for use in presentations or websites can be created at http://www.flamingtext.com.

MEDICAL INFORMATION is available in plenty on the net. It is beyond the scope of this article to go into details of how to get this information. Suffice it to say that one can access medical information through free and/or payment sites. I list in Annexure 1, some of the sites I access commonly; It is by no means a comprehensive list and it also has a surgery/Gastroenterology bias because of the specialty I practice.

The list may be boring to go through! But the intention is to let you see what varied information is available on the net – that too for free. You may choose to visit similar sites in your specialty.

Not all is well with the net all the time! ***PROBLEMS*** do exist.

Connectivity and slow speeds can be a problems in certain places in the country.

A lot of objectionable material like pornography, sites promoting terrorism and violence etc are equally freely accessible. Some amount of self control and control on children has to be exercised by responsible adults.

A lot of material on the net is not dependable and reliable. One must attempt to access only peer reviewed sites.

The net can be an addicting phenomenon. Psychiatrists now recognize a whole new concept of 'net neurosis'. These neurotics spend more than 4 hours a day browsing the net; skip meals many time; miss work at times and neglect their families. Most of us do not fall under this category; but the potential harm that the net can cause must be recognized and guarded against.

The present development in internet is the concept of ***SOCIAL COMPUTING***. This is concerned with social behaviour and

computational systems. Blogging, instant messaging, wikis are all parts of social computing. The so called 'Web 2' concept involves greater interactivity and gives prominence to these phenomena. A blog is basically a **Web Log.** These are online diaries of individuals and has taken off very well in the recent past. Social networking builds up communities of people with common interests. A Wiki is a website with information that can be edited by users themselves. The very popular Wikipedia, the online encyclopedia, is an example of this.

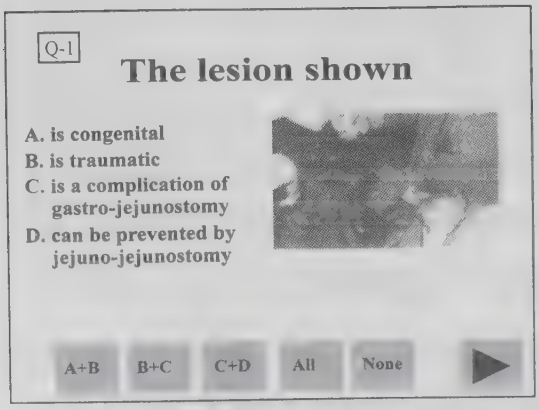
Judicious use of the net undoubtedly is an elevating experience which can very clearly improve the quality of our lives.

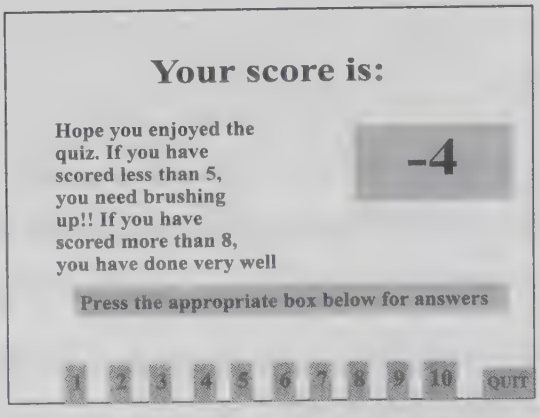
Medical education

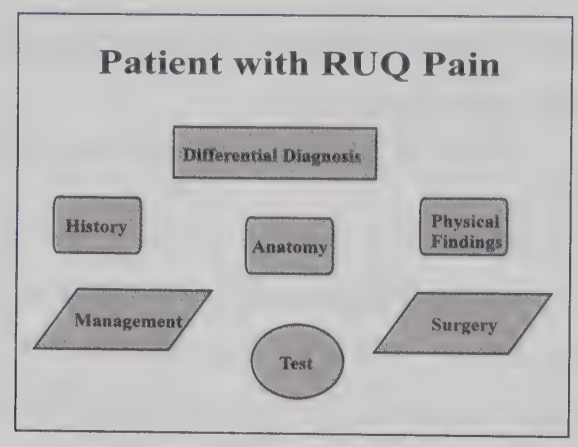
> *Education's purpose is to replace an empty mind with an open one.*
>
> Malcolm Forbes

Computer is a great tool for medical education. The whole paradigm of teaching changes when one uses the computer. It is very useful in employing the principles of adult learning. As has been the practice, I will list the techniques I use for teaching using the computer.

1. Multimedia presentations both for talks and stand alone ones with voice-overs.







2. Operative videos with commentary.
3. A combination of the above for teaching techniques like laparoscopy training modules and suturing etc.
4. Self assessment MCQs in the form of quiz questions incorporating scoring.
5. Complex hyperlinked teaching modules which promote problem based learning. As an example, we have a module for teaching about right upper quadrant pain. The main screen has several links which connect to various aspects of RUQ pain like, differential diagnosis, actual recorded patient histories of biliary colic, textual descriptions of various colics, anatomy of liver and biliary colic, pathology of gall stones and operative videos of laparoscopic cholecystectomy.
6. We have also used interactive virtual case histories for teaching; students are given case scenarios. They are asked to reason out their choice of management pathways. Relevant investigation results are given to them through hyperlinks. Differential diagnoses are discussed and a conclusion arrived at. These exercises are interesting, interactive and are very popular among students.

Thus the whole concept of teaching has seen a sea change with the

advent of computers. Teachers have to learn these newer techniques; once learnt their task becomes easy.

Conclusion

Computers play a large role in the everyday lives of humans; healthcare professionals are no exception. While the use of computers is not as common in our country as it is in the west, we are catching up fast. Learning and using computers is a necessity today. We have attempted to give a brief overview of practical use of computers in this paper. The field is vast and is changing constantly. The capacity to process data and store data is increasing rapidly. The versatility of use is expanding. As professionals we must endeavour to keep pace with these developments.

Further reading

1. Computer assisted learning, Greenalgh T, *BMJ* 2001;322:40-4
2. Dual core processors
3. http://www.webopedia.com/DidYouKnow/Hardware_Software/2005/dual_core.asp
4. Electronic Medical Records
5. http://www.nap.edu/readingroom/books/ftr/52ee.html
6. Effective teaching, Donald A, BMJ 7152 Volume 317: 1998
7. Health information, Wyatt J C, BMJ 2005;331:566-568

Annexure 1

Some interesting and useful Internet sites

http://aafp.org/afp/ - a free site giving excellent material for family practice; good general reading for all specialties.

http://www.anatomyatlases.org/atlasofanatomy/index.shtml - Anatomy atlas; allows free downloads of pictures for noncommercial use.

http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=Books – Site of NLM, USA with a list of free online books available; of limited use for busy clinicians.

http://www.cancer.gov/cancerinfo/pdq/treatment - excellent summaries of constantly updated evidence based cancer treatment regimen. Very useful as the material is succinct.

http://www3.interscience.wiley.com/cgi-bin/mrwhome/106568753/HOME?CRETRY=1&SRETRY=0- Access to free full text articles from Cochrane library – site for the evidence based meta-analyses on medical topics

http://163.1.96.10/ - Excellent site for learning about evidence based medicine.

http://www.dlib.org/ - a site about digital libraries.

http://www.gastrosource.com/frameset_GI_PRE_LOGON.asp - a good site for information on Gastroeneterology topics.

http://www.mdlinx.com/ - free site for interesting articles on various topics.

http://www.mdconsult.com/ - pay site for access to very good review articles and text books.

http://www.freebooks4doctors.com/- another site for free online medical books.

http://www.cdc.gov/mmwr/ - epidemiology oriented publication from US Government. Several guidelines and best practices are covered in these monographs.

http://www.amia.org/index.asp - great site for medical informatics – to learn about computers I

http://www.biohealthmatics.com/technologies/software/emr.aspx - another site for health informatics.

http://www.postgradmed.com/ - excellent medicine oriented journal.

http://content.nejm.org/ - free site – New England journal of medicine.

http://www.statsoft.com/textbook/stathome.html - excellent site learn basics of statistics – also gives tools for simple processes like random number generation.

http://onlinestatbook.com/rvls/ - another site for statistics

http://surgical-tutor.org.uk/ - examination oriented site for surgical postgraduates.

http://www.cma.ca/index.cfm/ci_id/33493/la_id/1.htm - site for Canadian Journal of surgery – a free site.

http://www.thesurgeon.net/ - site of Edinburgh/Irish college of surgeons journal.

http://www.indianjsurg.com/ - site of Indian journal of surgery.

http://contemporarysurgery.com/ - good review articles on surgery.

http://www.his.org.uk/work/ - site dedicated to hospital infections, waste disposal etc.

http://www.nlm.nih.gov/ - site of National Library of Medicine – gateway for various health topics including Medline/Pubmed search for abstracts and Pubmed Central (PMC) search for free full text articles.

http://ukpmc.ac.uk/ - UK Pubmed site – with a full list of free journals

http://freemedicaljournals.com/index.htm - another site for free journal list.

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7

Clinical Skills Training in MBBS Course Curriculum

(Need for producing competent physicians)

Dr. Avinash Supe and Dr. Ankur Sharma

Introduction

Three decades ago, the Prime Minister of India, late Mrs. Indira Gandhi lamented that a fresh medical-college graduate was ill-equipped to practice medicine. The situation does not seem to have changed much. Human error is routinely blamed for air crashes, e railway accidents, following complex surgery or such other mishap. However, quick judgment and routine assignment of blame obscure a more complex truth. Whilst a particular action or an omission may be the immediate cause of an incident, closer analysis usually reveals a series of events: departures from safe practice and lack of human skills each influenced by the working environment and the wider organizational context.

The current practices in undergraduate training result in knowledgeable physicians who are efficient to pass examinations and solve MCQs but incompetent to tackle emergency situations [1]. In a faculty and graduates survey, 76% of participants felt that they were technically incompetent to tackle emergency situations. Most teachers are content in discussing what should be taught to the students rather than what students should be able to do with what they learn.[2] There is urgent need to develop an alternative, need-based curriculum to suit the health requirements of our society. There is also the need to revamp the examination system and make medical education more skill-oriented so as to rectify current deficiencies.

Need for skill learning

Skill-training was emphasized greatly during the ancient period, as is evident in the literature. In ancient times, Sushruta used to teach surgery by making his students work on inanimate objects, such as watermelon, clay models and reed. He taught surgical skills to his students using commony available materials; for instance, vegetables like gourd, watermelon, cucumber for incising and worm eaten wood for probing.[3] Sushruta emphasized that only after studying the science, grasping the meaning, acquiring the skills, operating on dummies, and developing ability to teach, a physician should enter the profession[4] . Ancient physicians knew taxonomy, simulators and skill-training. During the Renaissance, cadaver-based surgical training was initiated in Europe[5].

Even now an MBBS graduate is expected at the end of course, acquire desired skills for their professional work[6]. Knowledge alone is not enough and it is only preliminary to the acquisition of skills. The Edinburgh declaration (WFME 1988)[7] suggested that two-thirds of the time should be allocated to competence-based learning and skill acquisition.

Skill learning in undergraduate medical education

With the recent information explosion due to IT, approaches to surgery training have to be redefined. The stepwise approach in learning: Information → Knowledge → Wisdom needs to be regularized. Students should be oriented towards a "Must Do" rather than a "Must Know" approach. It should be emphasized that surgery is not just science but also art and commerce. When the surgeon talks to the patient, it is 'Art'; when he diagnoses a disease, it's 'Science'; and when he prescribes a treatment, it's 'Economics'

The doctor should maintain equilibrium between all the three and treat the patient accordingly. The future teaching modalities in

surgery and all other medical fields should take these qualities into account in their entirety, in order to devise a comprehensive, pragmatic and up-to-date curriculum for teaching. Procedural-skill training is an essential component of any training program in surgery. It is highly necessary to train the students in procedural skills, so as to prepare future competent doctors. A medical graduate in the current scenario is expected to provide his services in emergency conditions. The student should also be able to fill in the gap between his undergraduate training and future specialty. Until now skill-training was a neglected area but now much work is being done in this field.

What is a skill?

A skill is a refined pattern of movement or performance based upon and integrated with the perceived demands of the situation. Skill is expressive and is ability to do an appropriate thing in response to a situation. Performance, on the other hand, is global efficiency through a complex activity. Competence is judgmental and expressive. It refers to the ability to perform a task in an acceptable way at a specific point in time. **Proficiency is attained by repeated learning and it is demonstrated over a period of time** At undergraduate education, we can train people for competence and test their performance.

Surgery (Surgery **comes from** Art of hand - Latin- Chirugia - hand work), as its meaning describes, has always been considered a complex subject to teach and learn. The most consistent part of any surgery training program is objective learning where the learner set his own goals and objectives and is motivated and enthusiastic about the training.

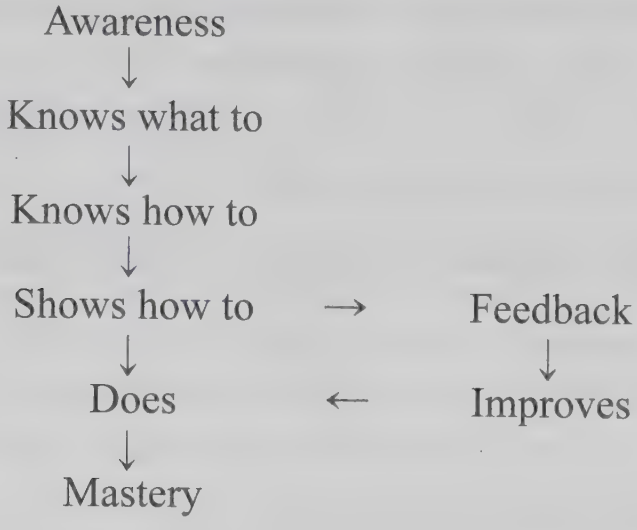
Classifications of skills

Skills are classified as **Intellectual skills** (to think in a desirable way in a given situation; this has underlying component of knowledge, eg.

ability to interpret haematological tests of a patient with anemia), **Psychomotor skills** (manual abilities needed to perform a skill and treat patients, e.g. ability to obtain a blood sample by venepuncture) and **Communication skills** (ability to communicate with others in a given situation, e.g. ability to motivate relatives for blood donation).

Aspects of Skill Training in Undergraduate Curriculum

Skill training should take into account the hierarchy of skill acquisition:-



Classically, any skill-learning can be seen as a four-stage phenomenon.

Don't know how much they know (Unconscious competence)
↓
Know how much they don't know (Conscious incompetence)
↓
Know how much they know (Conscious competence)
↓
Don't know how much they know (Unconscious competence)

One can appreciate this well while learning motor driving.

The objectives of skill training should be student-centered and not teacher-centered. Research has shown that student– centered training produces better results as compared to teacher-centered training. The

educators should try to make the curriculum as student friendly as they can and include all the necessary knowledge and skills required by the student to work as a future competent, independent doctor. Skill-training should be imparted with a clear view on objectives, implementation techniques and training outcomes.

The primary goals of any skill–learning opportunity should be consistently maintained: *Acquisition*: the skill will be acquired in a manner to ensure effective performance under appropriate circumstances. *Competency*: the skilled action or behavior will be consistently performed to a predetermined level. *Retention*: the skilled activity will be retained over time. *Transfer*: the training time directed to one skill will enhance the future likelihood of the acquisition or application of new skills.

Model for skills learning at undergraduate training

A systematic approach to the training program for undergraduate students is most likely to benefit the students in terms of knowledge and skills. The design of the training program should be consistent with the needs of the students as well as the educators and the policy makers. It should provide way for individualized and innovative instruction patterns and not suppress opportune learning. The model for skill-learning can be summarized in the following steps:

1. Task analysis
2. Objectives
3. Skill training – Methods and materials used
4. Implementation of the program
5. Assessment of the training program

Skill education would impart the basic clinical competence to the doctor to work on his own in different settings (skills required to work in rural settings will be different from urban settings and may serve as a bridge to future training)[8].

1. Task analysis

Before starting a training program for undergraduate students, the type and range of skills required should be analyzed. Tasks may vary ranging from common procedures performed everyday which need an average level of sophistication to tasks which are infrequently performed and require a certain higher level of dexterity. The DIF (difficulty, importance, frequency) analysis is a format designed to assist in deciding between the 'nice to know' and 'need to know' content of skill training. The usual problems faced by the undergraduates in the acquisition of a skill are insufficient knowledge and understanding of a procedure, insufficient opportunities to practice tasks that require high levels of dexterity, ill-trained guides and insufficient access to technological advances. These problems should be eliminated before starting a training program and every possible attempt should be made to make way for hassle-free learning.

2. Objectives

The objectives of any learning program should be established in advance. The objectives of a training program are usually a standard set of performances, which a student is supposed to achieve at the end of the program. Ideally, objectives should be set throughout the undergraduate study period as it will help standardize the level of training and will also eliminate unnecessary repetition. It will also help to evaluate the training that has been provided and specify the expected outcomes of a training program. One such standard list of objectives is set by the World Federation for Medical Education[2] for quality improvement in Basic Medical Education. It classifies objectives for clinical skills into two sets –

Basic standard: The medical school **must** ensure that students have patient contact and acquire sufficient clinical knowledge and skills to assume appropriate clinical responsibility upon graduation. **Quality**

development: Every student **should** have early patient contact leading to participation in patient care. The different components of clinical skills training **should** be structured according to the stage of the study program. This should be taken as a general guideline for setting objectives for any undergraduate training program. Individual instructional design and innovation shall always find a place in the teaching program. The objectives should take into account various scientific, logistic and socio-cultural factors that may influence learning.

3. Skill Training: methods and materials used[9]

Various methods and materials have been used for skill training in the past. In ancient times, inanimate objects were used by Sushruta to teach surgical skills. During the period of Renaissance, various newer techniques for training were initiated in medieval Europe.

In a large group, skills can be taught by a lecture, symposium or panel discussion but these have poor effectivity. Skill is better demonstrated in small groups by workshops, group discussions, demonstrations and practical sessions[11]. The best method to learn a skill is one-to-one interaction between the trainer and the trainee. This is commonly followed at postgraduate education but most colleges do not have adequate resources to implement this for undergraduate students. Skill learning is also enhanced in unsupervised settings by watching videos, computer-aided programs and simulators.

Human experience is the best tools for clinical and procedural learning. In India, most teaching hospitals attached to government medical colleges have a large patient-volume that provides an excellent teaching medium. Human experience can be acquired in outdoor and indoor departments. Other human experiences are standardized patients (actors who mimic clinical signs) or cadavers. Methods using standardized patients are very systematic but extremely expensive; hence, not practiced in India. Human-cadaver

laboratories are good platforms to learn higher levels of skills for complex surgery. In our center, cadavers are utilized for learning laparoscopic, neurosurgical and orthopedic surgery[11]. Basic surgical skills can be learned on specially designed models in skill labs. Well developed skill labs with mannequins can also teach basic and advanced cardiac /life support skills. Computer-based skill development programs train students in a structured manner but are usually not affordable in developing countries. Animals were used for learning procedures for many years but recently, due to strict animal laws, this has been discontinued. Thus, a variety of media are available for skill learning. The choice of the instructional alternatives and media depends upon the consideration of effectiveness, efficiency, resources and feasibility.

Historically, cadaver-based teaching has been highly popular and there are familiar illustrations of crowded anatomy theatres. Currently, surgical training involves didactic lectures, case presentations and observation of various surgical skills by undergraduate students without any active participation in patient care. Didactic lectures, as a means to teach surgery, are inadequate. Lectures are unable to make a pictorial presentation of the problem. According to Gardner's Multiple Intelligence Theory, the usual principle of didactic lectures ('one size fits all') is not appropriate for skill training. With the advent of information technology in healthcare, new methods of teaching have come to replace the older methods. Videos are considered to be effective in learning skills and saving time in training but knowledge acquisition is equivalent to the good old 'pen and paper' approach[12].

Simulators are the latest innovations in the field of surgery and are a promising proposition for future surgical training. Simulators give hands – on-like experience of surgery but are prohibitively expensive, thus excluding them from training programs in most developing countries[13].

A simulator is a good tool for teaching novices and also to test the competencies of experienced surgeons[14, 15]. Research has shown that better performance on a simulator leads to better real-life surgical performance. Cognition, recall and good knowledge-acquirement require Integrated Learning to be made a part of the undergraduate curriculum. It can be imparted by integrated lectures, case presentations, symposiums etc. Fluid learning is a model based on phased acquisition of knowledge[16]. It has shown to be effective by research. In fluid learning, the knowledge is given in phases so that the student has the time for retention, recall and transfer of his previous knowledge. Structured Clinical Instructional Modules for trauma and life support have shown to be very effective in procedural skill training for life-saving measures[17, 18]. Recently, these are being employed for training of Breast Cancer management. Finally, the role of active, adult learning on the part of the student cannot be overemphasized.

Effectiveness and efficiency of skill learning.

Effectiveness is the quality of a learning experience, which helps in achieving a learning objective. Effectiveness depends on the realistic nature of the learning experience. If the experience is closer to reality and has active participation of the learner, its effectiveness is greater. If the learner performs a procedure or activity in a real or contrived situation, it is more effective than hearing or reading the activity.

Efficiency is the quality of a learning experience which helps in achieving a learning objective with minimum expense of time and other resources. Effectivity and efficiency have an inverse relationship. Hearing a description of a skill (performing a CPR) in a lecture is very efficient learning experience as it could instruct 100 students in an hour but it is not an effective method. Performing a CPR on a patient is a very effective learning experience but is not efficient as only one student can be trained at a time.

Implementation of Skill Training

Implementation of training should be carried out with active student participation, where the student should be a goal-oriented, purposeful and voluntary learner, who will provide a feedback after the whole training exercise. A consolidated list of skills is attached (Annexe I). Teaching modules for skill training should be part of the instructional design. Teaching modules of the Royal College of Surgeons of Edinburgh[19] **(2007)** emphasize stepwise approach. These modules include acquisition of knowledge, observation, practice on simulators, supervised activity, unsupervised activity The strategy should take into account practical considerations, like time facilities and available resources. It should also include theories from educational psychology to make skill training more relevant. A combination of the Observational Learning theory, which emphasizes the role of demonstration of the procedural skill to the learner, and Gagne's Instructional Events, makes a powerful model with a solid theoretical basis.

4. Assessment of the skill training program

Assessment of training shall necessarily be done to find out the effectiveness of the current program, changes to be made in the program and feedback about the standard, usefulness and implementation by the students. It also helps to standardize the student performance against preset variables. Assessment of procedural skills is different from the usual 'pen and paper' assessment. Buckley and Caple recommend an integrated approach to evaluation, acknowledging the need to utilize feedback and reaction from both internal and external resources. Various other assessment methods, such as Structured Clinical examination, simulators, artificial models (latex skin for suturing, IV insertion, and intubations manikins) can also be used. Assessment methods should be feasible, valid, objective and reliable ,

Intellectual and communication skills

Though this article mainly deals with procedural skills, a small note about other skills is essential. Cognitive or Intellectual skills range from recall and reasoning to problem solving. In today's world of internet, knowledge is not an issue for most teachers and students. Hence, emphasis must be given to develop clinical reasoning skills. These skills can be developed in medical students by methods such as patient management problems, Cambridge cases, one minute preceptor and complex MCQs. The "one-minute teacher" uses five steps to direct the learner's focus to a key aspect of a case, and the clinician teaches around that issue. Feedback is explicitly given (a step we often omit when busy). The clinician asks the learner to outline his or her diagnosis or management plan; questions the learner for reasoning; teaches general rules (take-home points); **provides** feedback on what was done well; and corrects errors and suggests what could be improved.

Communication skills are most essential for any physicians but are rarely emphasized in the traditional curriculum in most medical schools. Medical graduates must be able to demonstrate interpersonal and communication skills that result in effective information exchange and teaming with patients, their patients' families and professional associates. Graduates are expected to: 1. Create and sustain a therapeutic and ethically sound relationship with patients. 2. Use effective listening skills and elicit and provide information using effective non-verbal, explanatory, questioning, and writing skills 3. Work effectively with others as a member or leader of a healthcare team or other professional group. Communication skills are learned through interactive processes, such as demonstrations, role plays, video etc.

Summary

Skill training should become an integral part of the current

undergraduate curriculum and the approach to learning should change from "Must Know" to "Must Do". This approach is absolutely essential if we want to make future competent doctors. One must utilize newer methods of training and develop and implement structured training programs. Assessment methods vary in different settings, but it should be kept in mind that regular feedback from the students is absolutely essential in making an effective training program.

Further Reading

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Annex - I

Suggested List of Skills

At the end of the undergraduate training programme, it is expected that a student will be able to achieve proficiency in the following skills.

Source – NTTC workshop on clinical skills 1995- proceedings edited by Sethuraman K.R. JIPMER.[20]

Skill	Priority	Difficulty level
I. Clinical skills		
1. Obtain a proper relevant history; perform a humane and thorough clinical examination of all organs/ systems in adults and children including neonates.	I	Complex
2. Arrive at a logical working diagnosis after examination.	I	Complex
3. Order appropriate investigations keeping in mind their relevance and cost effectiveness	I	Complex
4. Plan and institute a line of treatment for common ailments which is need based. Cost effective and appropriate.	I	Complex
5. Individualise therapeutic requirements taking into consideration- patient, disease, socio-economic status and institutional/ governmental guidelines.	I	Complex
6. Recognise situations which call for urgent or early treatment at secondary and tertiary centers and make a prompt referral of such patients after giving first aid or emergency treatment	I	Complex

7. Monitor growth and development of children and differentiate normal from abnormal.	I	Complex
8. Assess severity of dehydration.	I	Simple
9. Assess and manage fluid/ electrolyte and acid-base imbalance.	I	Complex
10. Detect and institute corrective measures for nutritional deficiency.	I	Complex
11. Determine gestational age.	I	Complex
12. Know surface marking of common superficial arteries, veins, nerves and viscera.	I	Complex
II. Interpretive Skills		
1. Be aware of normal skiagraphic appearances. Ability to read X-rays and images.	I	Complex
2. Interpret abnormal laboratory values and abnormal skiagrams of common diseases.	I	Complex
3. Identify irrational prescriptions, be aware of their causes and avoid them at a personal level.	I	Complex
4. Interpret serological tests such as VDRL, ASLO, Widal, HIV, Rheumatoid factor, hepatitis infections.	I	Complex
5. Interpret antimicrobial sensitivity reports in relation to clinical situation.	I	Complex
6. Interpret peripheral smear and bone marrow report of common diseases like anemia.	I	Complex
III. Skills related to ethical behaviour and communication .		
1. Maintain ethical behaviour in all aspects of medical practice (informed consent, confidentiality, doctor-patient relationship, death and dying, organ donation, predictive testing, patient's rights	I	Complex
2. Obtain informed consent for any examination/ procedure	I	Complex
3. Be able to establish rapport and talk to patients and relatives about all aspects of disease- Prevention including health education, implications and natural history, need for investigations, choice of therapy,	I	Complex

appropriateness of the chosen time of management, implications of therapy including side effects and complications, need for compliance on the part of patient, prognosis and expected outcome of disease.		
4. Write a complete case record with all necessary details.	I	Complex
5. Write a proper discharge summary with all relevant information.	I	Simple
6. Write a proper referral note to secondary or tertiary centres or to other physicians with all necessary details.	I	Simple
IV. Medico-legal procedural skills		
1. Perform examination and issue proper certificates in the following medico- legal situations- injured patient, sexual offences, determination of age, birth and death.	I	Complex
2. Record dying declaration.	I	Complex
3. Perform collection, proper labeling, preservation and dispatch of medico- legal specimens.	II	Complex
4. Perform, record findings and issue report for a medico-legal autopsy.	II	Complex
5. Give evidence in a court of law as an expert witness.	I	Complex
V. Skills related to laboratory work		
1. Adopt universal precautions for self protection against hepatitis and HIV	I	Simple
2. Perform proper collection and transport of laboratory specimens.	I	Simple
3. Do a complete urine-analysis.	I	Complex
4. Do haematological procedures, Hb, TLC/ DLC, peripheral smear, blood grouping and cross matching, ESR, BT/CT, blood indices.	I	Complex
5. Prepare saline and iodine preparation of stool specimens and examine them.	II	Simple
6. Prepare KOH mount for fungus.	III	Simple
7. Prepare a wet mount for Trichomona Vaginalis.	II	Simple

8. Do Gram ' s staining	I	Complex
9. Do Albert ' s staining	III	Simple
10. Do Ziehl- Neilson or modified Ziehl-Nielsens ' s stain for AFB.	I	Complex
11. Prepare peripheral smear for parasites (MP, MF, and Leishmania) and examine the same.	I	Simple
12. Do CSF and other body fluid examinations.	I	Simple
VI. Practical and Manipulative skills		
1. Perform CPR including neonatal resuscitation.	I	Complex
2. Perform endotracheal intubation.	I	Complex
3. Pass stomach tube and do stomach wash	I	Simple
4. Do circumcision	III	Complex
5. Reduce paraphimosis.	I	Simple
6. Do proctoscopy and recognize common ano-rectal lesions.	I	Simple
7. Perform injection and banding of piles.	III	Complex
8. Perform cricothroidestomy for airway management	I	Complex
9. Control surface bleeding.	I	Simple
10. Apply skin traction.	III	Complex
11. Put a figure- of –8 bandage for fractured clavicle.	III	Complex
12. Apply POP slabs/ casts for common fractures and sprains.	I	Simple
13. Transfer spinal injury cases.	I	Simple
14. Reduce Colles ' fracture.	III	Complex
15. Reduce shoulder dislocation.	II	Complex
16. Reduce TM joint dislocation.	II	Simple
17. Record visual acuity.	I	Simple
18. Examine anterior segment of eye.	I	Simple
19. Remove extraocular foreign body.	I	Simple
20. Do epilation of cilia.	II	Simple
21. Do lumbar puncture.	I	Complex
22. Do bone marrow aspiration.	II	Simple
23. Do pleural aspiration.	I	Simple

24. Do peritoneal tap (paracentesis)	I	Simple
25. Aspirate liver abscess.	III	Complex
26. Do speculum examination.	I	Simple
27. Make a pap smear.	I	Simple
28. Conduct normal labour.	I	Complex
29. Perform artificial rupture of membranes.	II	Simple
30. Perform episiotomy.	I	Complex
31. Apply outlet forceps.	II	Complex
32. Perform tubectomy.	I	Complex
33. Do instrumental evacuation	II	Complex
34. perform menstrual regulation	I	Complex
35. catheterize urinary bladder in male and female	I	Complex
36. Do otoscopy	I	Simple
37. Do needle biopsy and FNAC of external or superficial lesions.	III	Simple
38. Do rhinoscopy (anterior)	I	Simple
39. Do tuning fork tests.	I	Simple
40. Syringe ear to remove wax.	I	Simple
41. Do post nasal packing to stop epistaxis	III	Complex
42. Perform local anaesthesia, infiltration and nerve blocks (digital, pudendal, paracervical, field)	I/III	Simple/ Complex
43. Remove loose teeth	I	Simple
44. Perform vasectomy	I	Complex
45. Insert IUCD	I	Complex
46. Learn basic surgical skills	I	Simple

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8

Clinical Photography

Dr. S. Harinarayan

"A Picture Is Worth Thousand Words"

Clinical or Medical photography is "photographing a patient and or his body parts". The best person behind the camera is the doctor himself – because he knows what to show, how much to show, the composition, whether to highlight the background or foreground, lighting of the subject, camera angles etc. Hiring commercial photographers to do such tasks is usually undesirable and unsatisfactory.

Medical or clinical photography is not a new field and its evolution can be traced back to the First and Second World wars. In earlier days, photographers used to click only happy moments at hospital events and celebrations. Photographing patients, specimen, microscopic slides etc., for reports and publications have metamorphosed into a skilled group of allied health professionals working with patients and doctors on call service. Clinical photography has proven itself to be valuable aid in all aspects of medicine. It is not confined to any one area.

Producing a good and presentable clinical photograph in a hospital or medical college was a very difficult task in the past. It is mandatory now for all medical colleges and hospitals to have a medical photographer on their pay roll. In our country a very few teaching institutions have a photography department. Even when sanctioned, they were not functioning satisfactorily due to various reasons, such

as, want of funds or separate budget allotment, want of proper photographic equipment, lack of proper personnel to head the department etc. When equipment was supplied, they were misused. This was during sixties and seventees. Now the scenario is changing. Most of the Postgraduate institutions have good photography departments well equipped with Analog and Digital cameras, computers, macro and microphotography equipment, video cameras etc.

In the past, it was very difficult to get clinical photographs for dissertations. Post graduate student had to run to a nearby photo studio to get a photographer, who often was equipped or skilled for only a passport photographs or for group exposures with a big field camera, or take the patient to a studio to get a clinical photograph. If only the doctor knew how to take a good picture either in wards or operation theatre, such problems would have been solved.

Benefits of Clinical Photography

Photographs are needed for many a purpose. Clinical photographs aid teachers, students and researchers. Diagnostic photographs can be invaluable in some circumstances. For instance, when radiographs do not support clinical observation or second consultation or when visual records of the patient's condition are desired for submission of claims. Photographs provide accurate documentation of the pre and post operative condition. Documentation is necessary for gauging treatment progress and for potential legal reasons.

The application of photography in plastic surgery is very important as the patient is required to have photos taken of the body part that will undergo plastic surgery. These photos enable the surgeon to do his home work a day or two before surgery. It helps the surgeon to assess the post operative result.

The other areas of specialization in clinical photography are varied. Ophthalmic photography involves the creation of images of the eye.

Dental photography which is a sub-specialty of clinical photography involves taking pictures of mouth, teeth and face to illustrate the dental diseases, malformations, soft tissue malformations and injuries and for monitoring treatment plans.

With the advent of digital technology recording and storing of images is easy. However, this has also led to manipulation or tampering of digital images. To maintain the integrity of the images, manipulation may only be carried out on the whole image and must be limited to simple sharpening adjustment of contrast, sharpness and correction of colour balance etc.

Ethics in Medical Photography

There are many ethical considerations in clinical photography. Patient's consent is necessary for the use and publication of archieval images. Confidentiality also has to be maintained (like blocking the eyes or blurring the identity by digital pixalistion). Written permission of the patient has to be obtained before photographing. Clinical photographers have a moral and ethical responsibility towards patient and should treat all photographs taken as confidential. Doctors or for that matter any health professional has no moral or legal right to display or publish photos in a book or medical manual without written permission of the patient and the other doctor who is in charge of the patient. These clinical photographs are not for public display, but they add valuable insight into the problem being.

Recommended photographic equipment

Any doctor or postgraduate student interested in clinical photographs should possess certain basic photographic equipment.

1. Camera: choices are professional or amateur camera

    A 35 mm SLR (Single Lens Reflex) camera with interchangeable lenses for Analog photographs, transparency

film (reversible film) for slides or negative films for prints. Negative films and prints may be active for some more years.

Best choice would be a Digital SLR camera with 5 to 6 Mega pixels. Now even the point shoot digital cameras are good enough for clinical work. They are very handy and less space occupying can be carried in the apron pocket of the doctor. (More detailed description of digital camera is given separately)

Yashica eye and Dental camera I and II with a fixed 200 mm lens and ring flash is available which is designed for clinical photography work.

2. Choice of Lens:

A normal zoom lens of 35 mm to 70 mm, focal length which comes with the body of the camera.

A macro lens 70 mm to 200 mm focal length for close up work which is a must for clinical photography.

Wide angle and telephoto lenses have no use in clinical photography.

3. Light Source:

A small, dedicated, electronic flash is required. The digital cameras come with built in small flash, good enough for close-up photos. Ambient light in the wards and window light are also good source of light without harsh sunlight directly on the patients. Expose in a shadow with reflected light from a white wall or floor. Dramatic lighting adds aesthetics to the picture. A flat picture without shadow is no good. In the operation room, ideal lighting condition is the huge shadowless operating lamps with halogen bulbs and blue glass, which corrects the Kelvin temperature of the light. There is no need to use correction filters to compensate yellow light from

tungsten filaments. Sometimes anesthetists do not allow flash photography for the fear of explosion of anesthetic gases.

4. Stand

A foldable but sturdy Tripod as a good camera support is sometimes required. Hand held cameras in low lighting conditions and macro work will give a camera shake. To avoid such shakes, a tripod goes a long way with a high speed synchronizing electronic flash, which shoots at 1/1000th of a second.

Some Tips

Exposure Values

With the advent of digital and auto exposure technology, doctors need not worry about mastering over camera aperture (diaphragm) and shutter speed. Now auto cameras expose at 3 frame bracketing, one normal, one stop under and one stop over. You can choose any one of the three best frames. Frame numbers are automatically selected by the camera.

Selection of Background

It is very important to highlight the subject. A simple mono colour background will be appealing. Blurring of the background by shallow depth of field – by increasing the size of the apurture to a bigger size f5.6 to f4.5 will do the trick. There are many good backgrounds available in the wards (blue or green coloured screen) and operation room (linen usually green). Dark shadow of the operating room makes acceptable background. Avoid out of focus foreground which are disturbing like drip stand, anesthesia or instrument trolley etc.

Carry a camera always

It is advisable that all clinical postgraduate students and surgeons, especially plastic surgeons and cosmetologists should carry a camera

at all times because one cannot predict when you need it most either in your clinic, wards or operation room

Photography in Operation room

When a professional photographer or a trained assistant has been asked to take photos, prior permission of anesthesiologist should be taken. The camera and equipment should be clean though not sterilized, can be wrapped in sterile towels. Tripod, when taken into operation theatre, should be cleaned with antiseptic lotion. Autoclavable camera covers are available for NIKON cameras, but they are very expensive. Short focal length Macro lenses should not be used as the photographer may have to go very close to the area of operation. Hence, it is advisable to pre-focus and compose on a LCD monitor or view finder the area to be photographed.

Photography by the operating surgeon

Some operating surgeons prefer to take pictures by themselves during surgery. In such a situation to photograph different stages of surgery, one has to select the field of operation and mount an auto-focus and auto-winding camera on a tripod away from operation table. A long focal length Macro lens say 100mm or 200mm (Medical Nikon) with Ring flash around the front element of the lenses is fixed. To expose the film and to operate the shutter by the surgeon himself, there are three options: (i) change the sterile glove after each expose by wearing two gloves one over the other; (ii) stainless steel long flexible cable releases are available which can be autoclaved (iii) shutter release is done by a foot switch similar to a surgical cautary in case motor driven camera. Above all, one has to take extra precaution to maintain sterile conditions while photographing.

Digital Photography

Choosing a Digital Camera

When deciding which camera to buy, one of the key things to look for is the number of megapixels (M.P) the camera has. All digital images are made up of individual picture elements called "Pixels". Higher the number of pixels, better would be the quality of image. Today pixel value ranges from 1 MP to 16 MP. As a general rule of thumb, I MP is sufficient only to view the image on a computer. If you want to make photo quality prints, then you need a camera with minimum of 3 MP.

Image quality is also governed by the quality of the lens. Fortunately, all the lenses found in modern compact cameras tend to be of good quality. Another key consideration is the power of the optical zoom. Most compact cameras have a 3X or 4X optical zoom, which is adequate for our situation in clinical photography. It should be noted that one should not be impressed with a sizeable 'Digital Zoom" capability; this digital manipulation results in some loss of clarity of the picture.

Memory cards and Card Readers

Dig cams are supplied with small capacity memory card, say, 4 MB, 8MB or 16MB. We will not be able to store many images on it. High capacity memory cards are optional. They are available in Giga bite (GB) capacity from 1 GB to 16 GB cards. Following chart will show the capacity of cards quality and quantity of images:

Images are usually transferred from the camera to the computer via a special cable called USB cable (Universal Serial Bus). An

Card Memory Capacity (MB)	Low Quality Images (64 KB)	High Quality Images (500KB)
16 MB	250	32
32 MB	500	64
64 MB	1000	128
256 MB	4000	512
512 MB	8000	1024

alternative method is to connect the card reader to the computer. To transfer images remove the card from the camera and insert the card into card reader. This will launch software on the computer that will show you how to copy the image from the card across the hard disk on to the computer. There are a wide variety of memory card formats available. These are not usually interchangeable. So if you buy card reader, make sure that it is compatible with the memory card that fits your camera.

Scanners

To create a digital image from a photo print or slide, a mid range or flat bed scanner will suffice. Minimum resolution required is 1,200 dpi (dots per inch). For negative and slide, a dedicated scanner with resolution not less than 1200 dpi is required. "Bit depth" is the amount of colour information a scanner can interpret. Preferred bit depth for scanning films and slides range from 24 to 36 bits.

Digital Manipulation

One of the major advantages of digital photography, in addition to the scrutiny of the picture for its quality, as soon as it is taken, is the capacity to modify it to enhance its quality. Annotation, highlighting by adding pointing arrows, drawing circles, zooming in on certain areas etc, make the picture a lot more informative than an unmodified picture.

In conclusion, doctors must make it a habit to document all clinical material that they see. These come in handy for various applications like patient education, communication with colleagues and in medico-legal issues. The cost of digital cameras and computers are such that they are very affordable. The need of the day is for docctors to change their mindsets and start documenting their work diligently.

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9

How to Use a Library

Dr. K Lakshman

Introduction

The common adage used today is that 'the world is flat'. It essentially means that the world has shrunk in terms of human interaction. The medical professional of today has to be equipped to ply his trade with equal comfort and efficiency, in any part of the world. This, and only this, will enable him to survive as a professional. The power for this task at hand comes from knowledge and skill. And, knowledge and to some extent, skill, are obtained from a library. Hence, it becomes important to know how to use a library.

Evidence Based Medicine

Medicine and religion were synonymous up to the time of renaissance. Science, as we know it today, had its origin in mid 1800s. One of the first definitions of science was that given by Ruskin – "The work of science is to substitute facts for appearances and demonstrations for impressions". Essentially, science works towards demonstrating facts. The demonstrations, driven by verifiable data, become evidence. If we have to practice scientific medicine, as we claim, we have to quote evidence for the actions we take in our work.

Sackett defines Evidence as follows – 'Evidence-based medicine is the conscientious, explicit and judicious use of current best evidence in making decisions about the care of individual patients. The practice of evidence-based medicine means integrating individual clinical expertise with the best available external clinical evidence from systematic research'.

It is our work in the library that enables us to get the knowledge base to practice Evidence Based Medicine. For information to be really useful, it must be scientifically valid and current.

Value of Scientific Information

Value of studies in increasing order
Systematic reviews / Meta analysis
Randomised Double Blind studies
Randomised Single Blind studies
Randomised studies
Prospective studies
Retrospective studies
Anecdotal experiences

Cochrane collection, McMaster University

The value of a scientific study comes from the rigour with which the data is collected and analysed. In this context, the anecdotal experience of an individual, even though he may be an 'expert', is very limited. Data from Controlled trials which take in confounding factors in their analysis is the currently accepted standard for a scientific study.

The veracity of data collection and analysis is reviewed by 'peers' or experts in the field. Such peer reviewed articles are the only ones which have to be accepted as scientifically valid.

How Current is the information?

Medical literature – How recent is it?
Peer reviewed Journal articles
Review in Journals
Review in compendia
Text books
Conference paper presentations

Scientific material has to be recent as well. The recent digital revolution has ensured that most material, when dated, can be very current. However, print media, which is still the most commonly used format, raises some issues in this regard.

The information in a text book tends to be about 4-5 years 'old'. It will also show an author bias. Reviews in compendia tend to be more recent than text book chapters. Review articles in journals tend to be comprehensive and recent and would be the most useful for postgraduate and CME activity. Journal articles are perhaps the most recent work and are also stimulatory, in that, controversies will be addressed.

In summary, when one is looking for medical information, one is best served by looking up a peer reviewed article based on randomized trials and meta-analyses, preferably in a reputed journal.

'Focus' on getting information

A visit to the library or a study session at home must have a focus for it to be useful. The study session should be aimed at one of the following:

1. Look for case specific information

One of the best ways to understand the subject and retain information is to refer to the 'books' regarding a clinical situation. When one is taking care of a patient, every aspect of that care has to be analysed scientifically. Were the correct tests done? Was the diagnosis correct? Was proper treatment given? Each individual member of the team must analyse the case on these lines and literature has to be sought for each of these aspects.

2. Look for controversies / Recent advances

Most scientific advances occur in small increments. One cannot expect giant leaps in knowledge base. The practice on the wards, have to be questioned in a healthy and scientific manner. For instance, is a nasogastric tube really needed after a laparotomy? Is radiofrequency ablation really useful in hepatic metastatic disease? The scientifically aware professional will look for and obtain relevant information for such questions from a library.

3. Prepare for academic activity

One may be presenting a paper, a subject seminar or a journal club. The focus for such a session in the library would be directed towards the activity at hand. One would refer to cross references for a journal club. The study would be wider and deeper for a subject seminar.

4. General reading

One may also have a 'general' visit to the library. Typically, it would involve browsing through journals and text books to be generally aware of what is available and what issues are being discussed at a given time. Generally standard journals like the British Medical journal, The Lancet or The New England Journal of medicine (or other specialty journals) are scanned for this kind of information.

Print Library

Use of print library is still the commonest way of obtaining information. The approach to information in a print library is different from that in a digital library.

A ***librarian*** forms an important link in obtaining information. He is trained in documenting, categorizing and obtaining information that the user is looking for. He plays a major role in:

Procuring the latest books and journals in a given subject and displaying them appropriately for the users to know.

Disseminating knowledge about the way the information is categorized and stored

Teaching the use of the catalogue

Organizing access to information not available in the library.

The ***following steps*** are usually followed while obtaining information from a print library:

1. If the details of a book or journal are known, one may go for it

directly in its storage area or after looking through the catalogue for availability.

2. The librarian may be approached for obtaining such specific information or, for suitable alternatives, if such material is not available.

3. If only the topic is known, one goes through the catalogue for available print material. The Index Medicus or its online version, the Pubmed, may be browsed to get a list of articles dealing with the subject. Armed with such a list, the articles themselves are sought.

4. If a specific activity is being planned like a journal club or a Morbidity meeting, the kind of information needed differs slightly (see Annexure 1). While the focus in each of these activities is different, the method of obtaining information remains the same.

Digital Library

Digital revolution is indeed here to stay. While the availability and access to a digital library is not universal, very soon, most information will be accessed through digital libraries. A digital library is much more versatile than a print library and serves many more functions.

The advantages of a digital library are:

1. It is a ***repository of knowledge*** with great storage capacity in very compact computers. The information can be in a multimedia format, thus ensuring better grasping and retention of information provided. The information may be in the form of text articles, presentations with voice over, embellished by relevant pictures or even movies, graphically describing the activity.

   Whatever the information, it is stored in the server of the library.

The information file can be shared and accessed through all the computers (nodes) in the network of the library. Here in lies the big advantage of a digital library. It is like having as many copies of the information as there are 'nodes' in the network. The file can be accessed by all the nodes, simultaneously.

2. The information can be made ***interactive***, thus making the learning process more 'fun'. Interactive sessions including quiz programmes, interactive modules with information provided based on the inputs from the user, or active real time assessment through questions. These sessions are known to improve attention, comprehension and retention of knowledge.

3. ***Search function*** is fast and efficient. Compared to a print library where references for a given topic may take several hours to glean, in a digital library, this can be accomplished in minutes. The problem may in fact be one of plenty, with the search 'throwing up' too many articles. One way of narrowing the search is to understand the use of Boolean operators. 'Search Engines' are programmes that select out information depending on the 'key words' provided by the user. If key words are separated by 'operators' like AND, OR, NOT etc., the computer understands the logic of the operators and limits the files selected. The Boolean operators are simple to use and with some practice, their use can be mastered. Another method of narrowing the search is to use key words or phrases. Again, a good librarian would be a great asset for individual users to learn the 'tricks' of efficient searching.

4. ***Transfer of data*** – The medium is the same for different kinds of data like, text, sound, still and moving pictures etc, in a digital library. Hence transfer of multimedia information is easy. One needs, of course, access to a computer. The information can be carried by physical media like CDs, Pen drives etc. or may be 'mailed' through email to any destination.

Digital data can also be transferred to servers on the 'net'; both uploading and downloading can be done through file transfer protocols. Large storage space is available on servers for a very reasonable cost. The digital library can monitor and regulate such transfer through proper use of username and passwords.

Three issues are of importance in a digital transfer of data. (1) The ***software programmes*** running the information must be running in the different computers used and their versions must be the same or, at least, compatible. For example, a PDF file runs on a programme called the Acrobat reader. If one 'takes' a PDF file from one computer to another, without the latter running the acrobat reader, the given file cannot be 'opened'. At times, different machines will be running different versions of the same software programme. Problems can occur when these different versions do not exhibit compatibility. (2) Many digital files, particularly the ones with sound and movie pictures are large files. These necessarily need a ***'broadband' connection*** for transfer of data. Of late, this has not been a major issue as cheap and reliable broadband connection is generally available, practically all over the country.(3) The real problem with all digital material transfer is the problem of ***viruses and malicious programmes***. Every effort is made to protect networks through the use of 'firewalls' and 'anti-virus' packages. Programmers with malicious intent do manage to break through these defences. The best protection is to have data transfer only between 'trusted' computers and to limit the use of transfer media like pen drives.

5. ***Internet*** - Access to the internet is one of the important functions of a digital library. Detailed discussion of the use of the internet is available in the chapter on computers in this book.

   The internet is a fund of knowledge. Every kind of information on general and specific topics related to medicine is available on the net. It is important to remember that one has to be selective about

using information available on the net. One must attempt to get information only from peer reviewed sites and web sites of reputed institutions.

The common useful sites to visit would include:

a. Professional bodies like medical associations e.g. http://asiksc.org/ - the website of the Karnataka Chapter of Association of Surgeons of India, www.**iages**.org.in – the website of the association of GI endosurgeons.

b. Site with access to medical books
http://www.freebooks4doctors.com/

c. Site with access to full text journals –
www.freemedicaljournals.com

d. Site for abstracts from indexed journals – Pubmed – and a few full text journal articles in Pubmedcentral - http://www.nlm.nih.gov/

This is far from being a full list and shows only a small sample of the type of sites that can be accessed. The sites to visit would depend on the information sought. The librarian would be helpful in accessing the needed information

6. Digital libraries communicate with their membership using ***electronic mail or email*** effectively.

a. Members may request a full text article after sending the librarian details of article source obtained from Pubmed.

b. Libraries send the Table of Contents (TOCs) of popular journals by email to their members. The latter may then ask for and get the full text of articles that interest them.

c. Libraries send out invites for workshops and other programmes they conduct through email.

d. Special interest groups within the library membership can

exchange interesting articles they come across by group emailing.

7. ***Multimedia publication*** - An important part of any professional learning is scientific communication. It may take the form of a lecture with a digital presentation, publication of a scientific article or the production of a multimedia presentation on a given topic.

   Digital libraries help individuals carry out these functions by providing computers with software capable of doing all these functions. A word processor package for producing text material; a spread sheet for making the necessary calculations and carrying out basic statistics and producing charts and graphs; a statistical package for carrying out advanced statistical analysis; a presentation package for putting together an attractive presentation; a graphics package for digital manipulation and annotation of still pictures; a video package for editing and annotating movies; a web enabling software like Adobe Acrobat for converting files into a PDF format for publication on the internet; software for file transfers etc.

8. ***Skills learning*** – At present, scope for skills learning in libraries is limited. The future is promising for learning skills in a digital library. Many virtual reality modules are available in specialist centres. Soon they will be affordable and will become available more commonly.

Conclusion

An essential part of the learning process is to learn how to learn. Learning to use a library is one such learning process. This paper has attempted to introduce the concept of evidence based learning. It goes on to stress the need for focused learning. It further explains the nuances of using a print library and explains in detail the potential power in the use of a digital library. While such libraries are not universally available, the principles of use apply across the globe.

The same principles govern the use of the internet as well. Thus the world has become 'flat' and individuals across the globe now have a 'level playing field'. It is for us to use this potential and be competitive in our profession. It is thus imperative that medical professionals learn the use of computers and harness the power of a digital library.

Further reading:

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4. Termuhlen PM, Mann BD, The resident, the student, and the competencies, The American Journal of Surgery, 193, (2007) 94–95
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Annexure 1

The proper use of print or digital library involves retrieval of information for a specific academic activity. The following information defines the conventional teaching tools that are used to acquire knowledge. The purpose of each kind of teaching/learning exercise and the mechanism of executing the process are described. Understanding this enables the student to get the right kind of focused information from the library.

This annexure attempts to define the scope and mechanisms that

cover some of the commonest conventional teaching tools employed in medical education.

Each tool will be considered under the following headings:

1. Objectives - What is to be achieved by this activity
2. Mechanism - How is it to be done
3. Reference - What kind of reading is to be done?

The preceptor for all the activities would be either Professor or Asst Professor or Lecturer

Bedside Clinics

Objectives: Hone skills in history taking
Elicit & interpret significant clinical signs
Discuss differential diagnosis and managemant

Mechanism: Select cases;
Get one PG to present
Group discussion to follow

Reference: Books on clinical methods
Books describing differential diagnosis
Journals covering topics concerning the case being discussed

Subject Seminars

Objectives: Learn in depth about a topic
Get relevant references
Collate data / Summarize
Give a presentation confidently
Learn to face questioning by the audience

Mechanism: Select topics both basic and advanced
Collect relevant papers – help with literature search

Get the gist of the topic
Give a presentation for 20-30 min.

Reference: Basic and reference books on the topic
Review articles in compendia and journals
Original articles discussing controversies and recent developments

Journal Clubs

Objectives: To develop the concept of evidence based surgery
To learn the basics of statistics
To critique a paper

Mechanism: Selection of article (preceptor chooses a candidate and helps him choose the article. Copy of the article is given to others in the group. Presenter reviews the article with cross references if necessary and the discussion follows

Reference: Recent journal articles and their cross references
References on statistical methods used
References on evidence based evaluation of a paper

Clinico-pathologic Conferences

Objectives: Understand the 'flow' of working up a case
Analysis of investigations – advantages / Limitations
Understand the value of differential diagnosis
Prepare contingency plans to face 'surprises'

Mechanism: Selection of cases – Diagnostic dilemma, Management problem, Controversies, Surprises

(pathological) Case presentation followed by audience participation Final remarks by the pathologist

Reference: Books on differential diagnosis
Reference books on related specialties like radiology / pathology

Morbidity and Mortality Meetings

Objectives: Analyze surgical complications
Learn Basics of surgical audit
Learn ways to minimize complications
Understand accountability
Learn ethical issues in treatment
Learn to make objective and constructive criticism

Mechanism: Collection of data of the previous month of any complications
Report on the data – tables / charts
Choose 2-3 cases for highlighting, based on possible errors or shortfalls in clinical judgment.
Literature search to substantiate or differ from the intervention employed
Include other departments in the discussion
Discussion and consensus on change of practice, if any.

Reference: Review articles and original articles on the topic
Reference on audit
Reference work on ethical medical practice and communication.

Operative Sessions – Videos

Objectives: Learn surgical technique

Mechanism: Prepare and keep operative sessions on video – obtain commercial tape/CDs if available and have formal sessions discussing the technique and critiquing it. Discuss and apply modifications, if any, to suit local conditions.
Use surgical skills lab – if available to practice what is learnt

Reference: Operative surgery video tapes
Operative surgery multimedia presentations

Radiology Sessions

Objectives: Learn to 'read' x rays, scans

Mechanism: Review routine and interesting x-rays and scans done in the previous month
Discuss principles of reading radiographs and scans and understand the indications for and limitation of these investigations.

Reference: Reference text and review compendia on radiology.

Interdepartmental Meetings

Objectives: Learn to collate information from investigations
Learn liaison between departments
Get views from collaborating departments

Mechanism: Review routine and interesting x-rays and scans and pathology slides done in the previous month
Discuss principles of reading radiographs and scans and pathology slides and understand the advantages and limitation of these investigations.

Reference: Reference books in related specialty

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10

How to do Clinical Research

Dr. V. Bhattacharya and Dr. Shipra Bhattacharya

Research as the term implies means to search again with a novel thought or idea in mind, to discover something new and innovative. The discovery however, should be an effort either to advance convincingly an existing body of knowledge in a specified field or to modify the understanding of an already existing theory of a procedure, through various interrelated parameters designed and based on the original thoughts of a scientist. It is important to realize that every advancement in knowledge and technology has its root in basic research.

Research is a tedious job. It requires a lot of thoughtful study, based on thoughts stirred up by the already existing published study material in mind. Man by nature is curious and though the research instinct is present in each one of us ii is not a general phenomenon. Inspiration and some special circumstances trigger and compel analytical minds to leap into the unknown with the hope of finding something new. Illustrious researchers with commendable findings often are a strong source of inspiration serving as a model for amateurs venturing in the field. Since it's a daunting task research should be undertaken by only those who have a strong inclination for it because it requires patience, skill, devotion and dedication.

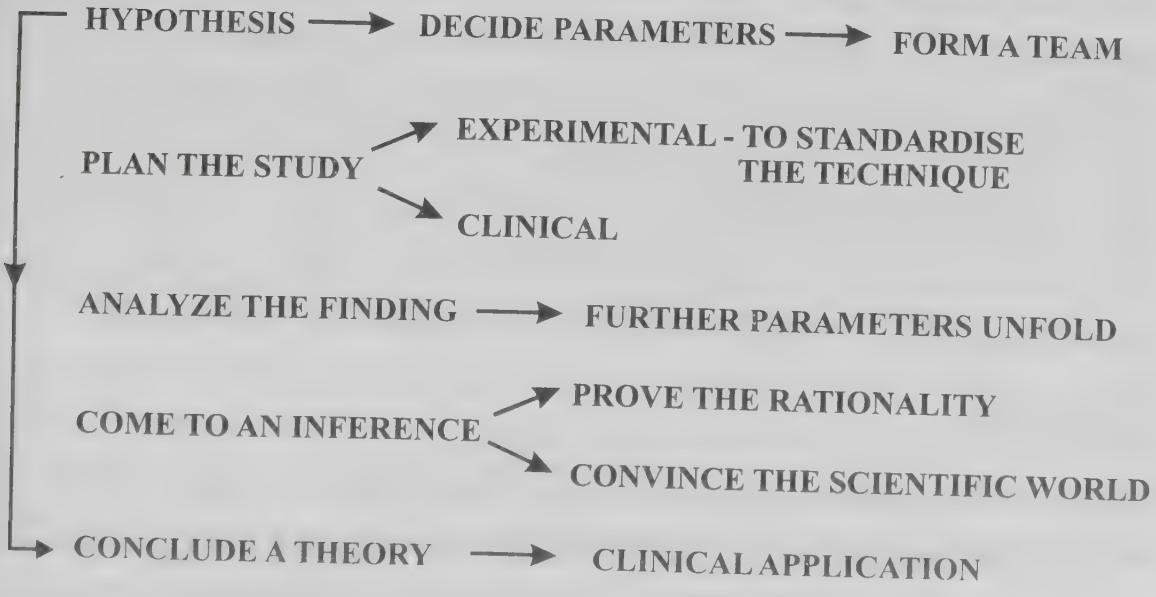
Successful research is passion oriented. It should be a pleasure not a penance because when the undertaking yields a successful parameter the passion turns into an obsession for further study and findings. To start with, a moderately equipped laboratory to perform clinical

research is the basic requirement. However a latest updated one is always advantageous.

Consistency is a very important attribute which dedicated researchers should possess. Adopting a logical pathway, hypothising a thought is the first thing which should germinate in a scientist's mind. Once the parameters to work on are decided, the choice of a proper team drawn from various departments, relating to the specific field of research is a mandatory requisite. Next follows a thorough discussion with team mates on the topic to formulate a study plan, inclusive of experimental aspects for standardizing the techniques and for the application of results in human beings respectively. Clearance from the ethical committee is essential prior to starting the work.

The findings of a parameter require analysis as a result of which further parameters gradually unfold. After a successful completion of studies on a particular aspect an inference is drawn proving the rationality of a particular procedure. A hypothesis thus becomes a theory. The technique becomes applicable and capable of being popularized in clinical conditions. Approved and accepted by the scientific world it becomes the discovery of a scientist.

PATHWAY OF SCIENCE



Genesis of Thought:

A thought can be evoked by many different situations.

a) One may encounter specific clinical material without any definite acceptable solution. He/She may have adopted certain techniques to deal with them for a long time without satisfactory results. Their dissatisfaction may have persuaded them to search further for a better rational technique.

b) Too many unconvincing procedures for a given problem, not based on sound principle and therefore, not well explained may require further explanation.

c) Attentive listening in a conference where the subject is open to controversy gives birth to new ideas demanding reasoning.

d) Scanty literature on a common clinical entity can trigger the thought process.

e) A part of an on going but unfinished research can also prove to be a source for further research.

Selection of Topic

The topic of research is of utmost importance. It should be an area of one's interest, preferably, a combination of basic research and clinical application. A project of this sort draws the attention of a wide spectrum of people. However before finalizing a topic one should be well aware of its feasibility in respect to (a) laboratory facility, (b) man power, (c) experimental work place if needed and (d) clinical material. All these are important as they have a direct bearing on the topic because the parameters will have to be planned accordingly.

Feasibility

At times the work has to be done outside duty hours or even on holidays as the concerned co-researchers or the equipment may not be available during routine hours. Therefore, before thinking about any

parameter, one must have first hand knowledge regarding the full hearted co-operation and involvement of the co-researchers, the other members of the team and the availability of equipment.

The outcome of the first parameter may necessitate a few more observations in the same department. A research therefore, must ensure consistent involvement with teammates by regularly interacting with them, while never quite forgetting to give them full credit for their endeavor and enthusiasm.

Theme of Research

A precise concept of the area of research is necessary as the theme depends upon that. For example if one intends to work on any reconstructive procedure then the theme should encompass the following issues.

i. Structural Analysis

ii. Functional Analysis

iii. Clinical Applications

The theme starts taking shape on the basis of these analytical findings compiled together.

Sequence of Thought

Once the topic has been decided, it is important to give a serious thought with the mind at peace, regarding the sequence of procedures. Basically, it's the mind which generates thoughts. As imagination is more important than knowledge, it can assume incredible proportions with the help of technology.

Sequence means arranging several parameters in mind in order namely which one should initiate and which ones should follow one after the other. Preferably, the basic science aspect should be taken up initially, as it is essential to realize that it is more difficult to deal with basic science than the clinical aspect.

Decision of Initial Parameters

The selection of initial parameters should be such that the basic features of the hypothesis can be tested on them. It should deal firstly with the structural aspect of research because it is on this foundation that the other features of the theme will revolve. For example, when we decide to study about a reconstructive procedure, it should deal with the constituents of tissue and their blood supply. This can be best studied through meticulous cadaveric dissection. While doing such a study one will automatically realize how much is not known. Thus the findings will generate enormous interest in the subject. Based on the observations, further parameters can be designed. This will arouse the desire to study the constituents and the blood supply separately and in more detail, through different parameters. The enclosed petals of the subject will then gradually unfold revealing the hidden secrets. Thoughtful early parameter is the key to successful research. If one works in an unplanned way, with a higher parameter he/she will soon realize that there is no other option but to revert back. The progress and tempo of research will automatically be hampered.

Formation of Team

Research is not a one man show. It involves team work which usually consists of two types of people: (i) who are oriented with the subject; (ii) those who need to be oriented.

The first group consists of those who are of the same speciality, with active participation in the basic discussion relating to formulation of parameters. They are either colleagues or residents or laboratory technicians. They have self interest and therefore are easy to induct.

The second group consists of variable individuals depending upon the parameter. They may be from varied branches of science namely, paraclinical, basic science or from a totally different faculty. It needs a lot of effort and persuasion for the main investigator to create interest, explaining the finer details and facing many irrelevant but inquisitive

queries. Persistent effort ultimately succeeds to instigate involvement in them. A union of two groups leads to a joint effective venture.

Review of Literature:

Access to review of literature precisely in relevance to the parameters, is a must for research. An in-depth study of the existing data exposes the unexplored areas making the lacunae evident. The detailed study provides ideas regarding the basic methodology to be adopted, the type of study model to be used as well as the limitations of some of the techniques. The question in the scientist's mind, "Can I find out the solution or add something new to the work" thus receives a positive answer.

The clinical application and utilization of knowledge, in the form of the outcome of the study, also come to the surface when existing material has been thoroughly perused. Comprehending and comparing the findings of other workers with one's own is of immense help in making one's finding credible. Articles therefore should be read methodically and reviewed with concentration.

Visualize the sequence of steps:

Each parameter requires thoughtful concentration in order to proceed meticulously in proper sequence. Even the minutest detail should be paid attention to. The materials required to conduct a particular parameter must be enlisted and procured before starting. For example if one plans to perform dye study on fresh cadaver then he/she should arrange for (a) all the surgical instruments, (b) dye and the injection tool, (c) good light source, (d) good resolution camera with a suitable background for documentation. Without these essentials, the anticipated result may not be achieved and documentation may turn out to be unsatisfactory, requiring unnecessary repetition of the procedure.

Method of Documentation:

A credible piece of research needs proper documentation which should be done from the beginning of the procedure and should be of excellent quality. Extensive documentation is better then scanty as it can be later edited per requirement. Documentation is essential for both presentation and publication. Failures and hurdles are an incredible part of research and instead of being discarded; they too should be documented because negative results also bear significance as no finding is irrelevant. No matter what happens, you will learn something. Science is not only about getting "the answer." Knowing that something didn't work is knowing actually quite a lot. Experiments that don't turn out as planned are an important step in finding an answer. We must analyze, identify and rectify them by taking the steps required in future. At the end of the study, the documents should be scrutinized thoroughly and a discussion with teammates should be arranged, to avoid missing out of detail on any aspect. Gradually over the years the material grows in quantity and quality ready for acceptance and publication in the scientific domain. The endeavor then becomes an experience of originality for the scientist.

Analysis of findings

After a preliminary analysis of the findings the whole team should critically evaluate the results. This certainly provides an unbiased opinion and opens up several windows for further investigation. It also demarcates the limitation of conclusion in a particular work. At the same time it decides what other parameters should be studied to come to a full proof inference for safe and successful clinical application. Can any new or modified technique be arrived at?

One successful research spurs you on to undertake many more, broadening your horizon in a particular field. There may be contradiction amongst the team members leading to repetition of the

method. Contradictions should be welcomed as they lead to a better understanding of the subject.

Clinical Applications

The standardization in animal experimental model is essential for research with clinical implication as its objective. This also helps in getting clearance from the ethical committee. Therefore one should preferably have access to animal experimental research laboratory.

In two situations such research is needed.

a. When there are several unsatisfactory techniques for a given problem.

b. When individual surgeons deal in their own way changing the procedure constantly.

A technique based on sound rationality with the potential to be practised by majority of hands should be evolved. This is only possible through research with clinical implication.

Presentation

The most important characteristic of good research lies in its presentation. The outcome of study therefore should be presented at proper scientific forums regularly. The task is demanding and requires tremendous effort and devotion to make it of quality in terms of content and message.

To make this possible the matter should be original or an addition throwing light on already existing knowledge. Direct involvement in a project, with first hand knowledge of the subject makes for authenticity. Prior to presentation, speculation of the queries that may arise after presentation is a must for a good researcher to prove his/her point of view. Thus the satisfactory index of research must be kept high for maintaining world class standards.

Interaction

A good research presentation is bound to generate a lot of questions. The more one interacts the more one gains in terms of knowledge which one can apply to one's work. Those who participate in interaction either by approving or contradicting need to be acknowledged because both help in increasing ones knowledge, throwing up new ideas and suggestions.

Publications

Writing an article is an art. It becomes effective and worthy of being appreciated when the matter is strong and a blend of fundamental basic research and appropriate clinical application. There should be subdivisions dealing with major aspects of the adopted procedure and its application. The language should be simple and an attempt should be made to publish it in subject oriented reputed indexed journals. Presentation and publication is what makes a researcher successful and known in the realm of science.

Funding for Research

An important aspect of research is to find the funding for the same. Some clinical research may be a part of routine clinical work and may not need any funding. All laboratory work will need funding. Some institutions may fund these themselves and the researcher may not have to worry about this. However, even here, a project report (proposal) is to be submitted to the institution for approval. But, generally, one has to apply for funding (to national or international agencies) by writing a proposal. Broadly speaking, the proposal must have a (a) preamble / introduction to say why the research work is relevant, (b) review of literature (b) a brief description of objectives and methodology, (c) a description of the equipment/consumables to be used / purchased (d) costing for the same (e) biodata of investigator(s) This is usually submitted to the funding authority (agency) for approval. In India, Indian Council for Medical Research

(ICMR) (www.icmr.nic.in) is one of the primary government institutions providing funds for medical research. Other Government of India agencies that support medical/biomedical and health related research are the Departmrnt of Science & Technology (dst.gov.in), Department of Biotechnology (dbtindia.nic.in), Council for Scientific & Industrial Research (CSIR) (csir.res.in) . Private trusts or Central Institutes like Indian Institute of Science, pharmaceutical companies may also fund research. In case a pharmaceutical company is involved in funding, it is important that the researcher retains his independence in carrying out research (and publishing results). International funding agencies could be UN organizations like the World Health Organization, or private institutions like the Ford Foundation, Gates Foundation etc also provide grants. Each agency / organization has its own set of priority areas that it would support, as well as guidelines and regulations, which can be obtained from their respective websites. International collaboration in biomedical / health research is also possible, information for which is also available in the websites of the national funding agencies.

Ethical Issues

Every research proposal utilizing human subjects or animals must have approval from duly constituted institutional ethics committee also known as Institutional Review Board (IRB). For detailed guidelines refer to ICMR website (www.icmr.nic.in).

Conclusion

Knowledge is unlimited. It is like a fathomless ocean. The deeper you strike the more treasures you discover. Science has limitless mysteries. Researchers are the ones who solve them bringing about a revolutionary effect by their thirst and quest. They face and overcome hurdles and experience immense pleasure and satisfaction with knowledge, untapped before, as their reward.

11

How to Write A Scientific Paper

Dr. Satish Shukla

Rain drops on earth and gets absorbed; as it continues to rain, it gives life to many dormant, dry vegetation and spores. Many living creatures start moving and functioning as per law of nature, to give 'life' to the area. It becomes green and flowers bloom. Birds and insects, many with chirping sounds buzz around as music of serenity. Like dry earth, the mind of human being is a fertile cosmos lying dormant in place, but you can make it live and buzz', if you so desire.. The human mind is a complicated structure with chips surpassing the most modern super computer. You are the master to stimulate and command the mind to get definitive results.

A scientist has a critical mind to judge if the results of his work are in consonance with the theory that he has propounded. This process gives him material for writing a paper.

Do you wish to write a paper? Before doing so ask the question – WHY do you wish to write a paper? Is it a compulsion? Or, is it a desire to reveal something new? If you are convinced that your material is worth publishing, then do so before the zeal goes away.[1,2]

Components

Paper writing has three components:

(a) Language and orderly writing

(b) Basic norms of scientific writing

(c) Scientific material writing

English is the prime language of scientific communication all over

the world. Get the language right. It should be in simple, grammatically correct and commonly used scientific words, understood by your readers. The work should be evidence based with clear message. It should not be jumbled with confusing thoughts and views. Take the help of Microsoft – Spell Star / Stedman Spell Check or an English teacher to help you write the paper.

Writing scientific work is always in narration and in past tense. Do not mix-up verbs, adverbs and tenses. Use active voice and not passive voice.

Example – Passive – My first operation which I did, will always be remembered by me.

Active - I will always remember the first operation that I performed.

AVOID :

Words not commonly used in scientific literature.

Use of slang.

Use of short forms like – don't, isn't , instead use - do not, is not

Abbreviations and acronyms. Give expanded form in parenthesis when used. You may use abbreviations for units of measures like cm (centimeter), mg (milligram) etc. Provide list of abbreviations at appropriate place.[2]

Truthful presentation of facts taking ethical issues into consideration is the basic norm of scientific paper. Any research using human subjects or performed on animals should have approval of ethical committee of the institution.[4,5]

Indian Council of Medical Research has given clear guidelines in this regard and is available at - http://www.icmr.nic.in.

Plagiarism is use of information, idea, photograph used in articles from other sources without acknowledgement and permission[2, 4]. Do not plagiarize.

Every journal has its own format. The format is generally the same except for some minor differences – like the number of words in an abstract or the requirement for underlining certain words etc. Similarly for citing references, use the particular format specified. Commonly followed style is Vancouver, 'chronologically numbered' style. This style was established by the International Committee of Medical Journal Editors . It is also known as: Uniform Requirements for Manuscripts Submitted to Biomedical Journals. You can get more details from this site - http://www.icmje.org/. Read the instructions to authors and carefully follow them while preparing the manuscript.

When organizing your writing, you have to consider who your target audience is. Organize yourself and make a time table for writing the article. Keep to the deadlines.

Format of a Scientific Paper

Most print and electronic journals follow the general format given below. A scientific article is divided into following sections –[1,2,4,5]

Title

Abstract

Introduction

Method and Material

Result

Discussion

Conclusion

Acknowledgement

References

TITLE

You have a 'working' title based on the subject of your work. As your

work progresses, you may have new ideas based on the results of your study. Thus the title may need to be reframed to reflect the message from your paper clearly[2]. The title should also be 'catchy'. A title should generally be precise, brief yet reflect factual contents of your article.

ABSTRACT

An abstract is a short summary of your paper highlighting the salient points. Write a brief conclusion in simple words depicting a clear message. [5] It should be 150 to 250 words with proper phrasing and paragraphs. Provide keywords or search words prominently, so that other researchers can find the article easily. This is particularly applicable to searches on electronic databases and the internet.

INTRODUCTION

Introduction is written keeping in mind the main objective and theme of the subject, and procedure carried out. Established scientific knowledge and its relevance with your hypothesis is to be mentioned.[2,4]

It defines the subject, the objective of the study and provides background information leading to the study. The reader should get a clear understanding of the author's hypothesis and means he has used to test it.

Clarity of thought with proper wording is necessary to indicate what is coming ahead. This encourages the reader to go into the depth of the article without any ambivalence.

MATERIAL & METHODS

In medical science, the material consists of study of either apparently healthy human subjects or patients or experimental animals[7,8,9]. Criteria of selection of subjects of study should be defined clearly in accordance with the objective of the paper. All the parameters to be

studied are clearly defined, without any ambiguity.[3]

Investigations designed in the project or study should be relevant and as per the objective. The methodology of the investigations is also to be described clearly. In experimental work, details of the animals like average age, sex and average weight are to be given. Any precaution taken before during and after procedure has to be described. Details of the procedure performed are to be mentioned.

Make sure that informed consent from the study subjects is taken and recorded. Obtain Institutional Ethical Committee clearance.[10,11] If the study involves any procedure, it should be written in detail in a step wise fashion.

RESULTS

Analyse data and present them. Presentation of your data properly is the key to the success of your article. This section includes the presentation of facts in different formats like words, figures, chart, tables, graphics or photographs depending on type of your work. Laboratory assisted projects will need the data to be presented in terms of figures, charts, tables and graphics. Clinical and procedures related articles should have photographs, graphics, figures and tables to supplement the work. There should not be any duplication, of data.[3,12] Always remember not to give any interpretation or conclusion of the data under this heading.

DISCUSSION

By the time you come to the stage of writing discussion, your knowledge about the subject is at its best. Try to corroborate the data with the hypothesis you put forward at the beginning of the study. Write down the points which favour the hypothesis and which do not. These points should be written in chronological order as per table/figure/chart or in order of its importance.[5,7]

First interpret the data supporting your views properly supported by

literature; secondly, interpret the data rejecting your views again supported by literature. In some cases you can discuss the data table wise both in support of or rejecting your views. But two different kinds of data or views should not be intermingled, because, this may confuse the readers.

All observations are to be explained as much as possible, focusing on mechanism in experimental or laboratory based scientific subject. In clinical studies involving patients, ancillary data like age, sex, past disorders, hereditary factors or familial disorders, environment, geographical consideration and personal habits make all the difference in the study, though, primary data regarding the disease or procedure of subject studied, remain the same. Thus, first explain the primary data as per your result and factor the ancillary data in, as mentioned above.

Once you have written the discussion and you are fully aware of the information in the available literature, ask yourself, the following questions.

1) Is the experiment or study designed, appropriate to test the hypothesis?

2) Does the study need more number of experiments or clinical data for better comparative analysis?

3) Does the study need to be modified in any form to get desired result appropriate to the hypothesis.

4) Are the results contrary to your expectation?

5) Did the study lead to a new question?

6) Is it leading to a new hypothesis?

A scientific study should not have any speculation in general. If data clearly show something new, this may be mentioned. In addition add a sentence that this has to be established in future studies.

At the end please be sure that the discussion is within the purview of the aim and objective of the study and limited to the data available in the study.

At the end, think of these issues

a) Any new question?

b) Any new hypothesis?

c) Any important negative finding?

d) Any suggestion for future studies

If the answer to any of these issues is in the affirmative, write one or two lines about the given issue, in the end.

CONCLUSION

Conclusion is the thumb print of your work. In clear words and short sentences, it should give the message of your hypothesis and work with authority. Do not be ambiguous and do not use words like 'may be' or 'possibly'.

ACKNOWLEDGEMENT

This is to acknowledge the help from all those who have guided you and helped in carrying out your work including head of unit, guide(s), teachers, students, laboratory staff, librarian and others. All those who helped you are to be given their due recognition[2,6].

REFERENCES

While giving references, follow the instructions given by the journal to which you are planning to submit. There is no limit to the number of references but usually, 15 to 20 references of highest priority should be included.

Conclusion of this Article

The purpose of writing scientific article may be many; but, the aim is

to be truthful and work as per your objectives and hypothesis. Collect data diligently and present them in a relevant manner.

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12

How to Pass the Exams?

Dr. Navita Verma

Most students hate exams. They hate the feeling of trying to remember the answer to a question, worrying that they focused on the wrong material, and waiting to receive their results.

It is over six years since I finished my MDS (Master in Dental Sciences), however the most recurring nightmare still haunting me is that of a sterile examination hall and an alien looking creature handing out a weird looking paper which mysteriously turns into a ball of fire and engulfs me entirely or an equally terrifying and chilling practical examination wherein I have to make complete denture impression for my patient, and lo and behold, my patient turns out to be a toothless lion. Worst is yet to come, my examiner is also a lion except his teeth are sharp and pointed TOWARDS MY JUGULAR. What do you say to that!!!! Strange as it may sound but my mother who is 20 years my senior still has examination nightmares! So I guess I do have a lot many years before these bone chilling fears disappear.

Universally examination brings dread and fear into the hearts of students every where. The ever enigmatic question still haunts "HOW TO PASS THE EXAMS?" Much of your success in college will come from your ability to pass and do well in exams. Exams are the most common and routine way of assessing the student's performance throughout the academic year. There are various types of exam fears; fever etc. which are experienced by almost all students and the degree of fear varies according to their levels of preparation (or lack of), abilities and confidence.

In such circumstances all students would want to find ways and means by which they can 'pass' or succeed in exams by adopting ways which are suitable for them.

My mother always gave me plenty of tips. As a matter of fact, so did my granny. Her one-pill-for-all formula was to have yogurt before an exam and goddess Saraswati would not desert me till the end. If only wishes were horses, I would be an ace jockey. My mother had a list of do's and don'ts most of which did not help much, but I never mustered enough guts to tell her so. Any way, let us get to the point "HOW SHOULD I PASS THE EXAM."

The movie "Three Idiots" was not only delectable but also a thought provoking one. It taught us that more than passing it is imbibing the concept that counts. Dear reader, I shall try to meddle along those lines. That is "How to use these learned concepts to clear the exams" .

As a student, I felt that teachers considered students a bit of a nuisance, and I remember thinking that if I'm ever in that position then I would do it differently, so now I shall try to think from the student perspective and seek 'how would I want this to be presented if I were a student? Supporting students and building that sense of rapport is so important – they need to know they have a mentor if they need it because it can be the difference between them dropping out and thriving in university.

Let Us Take the First Fledgling Step

When is the best time to start studying for an exam? May be from the day one of the course. Most of you will say "yeah right" sarcastically. But my dear friends learn from my mistake. I didn't and later wished that I should have started early. I offered lots of prayers in the local temple, made promises (read blackmail) to god that if only I pass this time..... I would change for good. So the key mantra is STUDY FROM DAY ONE. This requires commitment to learning and doing well in college.

Most of us can claim to be average students, and like any average student we all have our share of strengths and weakness. Most of us come determined to remain sincere and not bunk and miss a single class and invariably all of us break that rule and later try to make shady deals with God (read me). Unfortunately, that is human nature of all average people. Then what is it that I need to do that will etch a picture (positive one that is) in the mind of the teacher who will eventually evaluate my annual performance.

There are many ways in which a student can pass an exam, most of which are shortcuts to the best way to educate yourself. Also, a student can spend a great deal of money buying lists of the most often asked questions in past exams by the professor in question.

Well, those methods might work well enough for the student to pass, but I wonder how much knowledge would actually be retained by the student. The truth is, little, if any, real knowledge is retained. Some say that those methods are more like cheating. Yes, the student truly cheats himself or herself and those who might believe that the student actually learned something.

Dear reader, there is only one way in which to truly educate yourself. Yes, that tried and hard way is to study the material that is presented by the professor on a daily basis.

Like my mother I would like offer you a few tips on how to prepare for the dreaded exams, but unlike hers mine will be more practical. You might want to try these tips. It's neither hard nor expensive. After all it is not only about your exam marks; it's good to get to know your lecturers and start showing your appreciation towards them.

At least attend a minimum of 80% of classes

Be courteous and humble in class room.

Be sure to be present mentally in addition to your physical presence

Clear your topic related doubt at the end of the class.

Avoid being confrontational.

Read and revise the topic before the next class.

Keep your mind stress free and fresh when you study.

Decide Where to Study

If you are even remotely as restless as me, be sure to find a specific study place away from distractions like television and music to allow you to concentrate better. If you can concentrate well, vary your study places. This will increase your ability to remember the information in the test setting. Before the exams, study the topics of the syllabus you dislike most when you are as fresh as a daisy and not tired. You will learn them better. Vice versa for syllabus topics you really love - go to familiar parts of the syllabus when you are tired because you don't mind studying them.

Make An Easy Outline:

Just write down chapter title, headings and subheadings. Do not enter details. Memorise it from the text and then mentally fill in the blanks below each heading. The idea is to imbibe the concept and not rote memorize it. It helps in long term retention. Then, when you study details, your brain will recognize where to "store" them, and when you take the test your brain will be able to find the information more easily. It's like putting shelves, drawers and hangers in your closet because finding a shirt is faster in an organized closet than a pile of clothes on the floor. This technique is very useful for essay tests as well as multiple choices.

Visual Method:

Diagrams are perhaps the best way to allow your brain to recall. One technique is called concept mapping [1,2]. This technique can help break up long, boring study sessions and gives you feedback on how you are

doing in the days working up to the test. It allows you to become aware of what you know and as a result to be able to modify what you know or what you ought to know.

Teach Some One Else

One method that I found most successful was to teach the topic to somebody who is unfamiliar or has not understood the topic. They could be your peers or your juniors. Watching the change in their expression as they comprehend what up until now was an entangled maze for them is most gratifying. At the same time it helps concretize your knowledge. In the examination hall, the same question on the test paper will flood you with pleasant memories and the answer will appear clear as crystal.

Study in the Shower

Don't waste your shower time! To use this unusual study technique, stick a diagram, outline, or notes in a ziplock bag and tape it to a hanger. Then hang it in the shower so you can study and rinse at the same time. However much appealing it may sound, attempts at group studying in the shower is futile. It would be safe to say this study technique is not suitable for all.

Reward and Punishment

Studying and revising should always evoke a positive feeling rather than a negative one. The process of learning new concepts and accepting new ideas has to remain for life and that is possible only if it is associated with a pleasant feeling, not one which scares your guts out.

Reward yourself for work done, instead of punishing yourself for slipping! REWARDS will motivate you to continue studying; punishments tend to put you off. Use simple rewards- a walk, a TV session, a piece of chocolate, cuddling a pet or your best friend. Try not to eat while studying; you will not notice how much you

consume! But believe me the others will notice it and after your exams probably so will you. From experience I say, it is as difficult to shed post exam weight as post pregnancy one.

Now that the ground rules have been laid, let us approach the day of the exam. There are times when we all need help in passing a test. I have some tried and tested tips that are sure to help you ace that quiz on test day.

1. Be Confident-If you act like you know and you believe that you know it and you have the confidence to pass that test most of the time you will.
2. Get a good night's sleep - No matter how much you think you need to stay up all night and cram for the exam, don't. The lack of sleep will hurt you way more than the extra study time ever could.
3. Review your notes – look over your notes in the morning prior to the exam. Just a quick review helps to refresh it in the mind.
4. Eat properly – no one does well on an empty stomach. When you end up with that sick grumpy stomach it will be next to impossible to concentrate.
5. Be on time – this is no beemer, if you show up late there is a chance you will not even get to take the test and if you do, you will be stressed out before you ever get started on the test.

Let's Get Into The Dreaded Exam Hall:

6. Always think, analyze and evaluate before answering.
7. Read the question paper for at least 5 minutes before starting to answer.
8. In the exam, you are not allowed to write on the question paper.
9. Remember the examiner is a human being (except that multiple choice questions might be marked by a computer). Your writing

must be legible so that you can be awarded the marks that you deserve. Examiners are not out to trick you and take your marks – give them some credit, they really want to give you all the marks you deserve – so help them by writing clearly in sentences and sensibly.

Tips on answering Essay questions and MCQs

A few tips about answering essay and multiple choice questions (MCQs) would be in order. When you answer essay questions, note the time given for each question and the marks allotted for them. The details that you give in your answer depend on these two factors. Spend a few minutes reading all the questions in the paper. See both sides of the paper, lest you do not miss any questions! If choice is given, choose which ones you would answer. Keep some time for revision. Typically, in a three hour paper, long essay type questions may have a range of marks from 12 to 20 marks, and marks for short essay or short notes may vary from 6 to 10. Imagine that you would have about 150-160 minutes for answering these questions. Time your answers to cover each question say 20 minutes for each long essay question and about 5 to 8 minutes for short essay/short notes depending on the number of questions asked. Another way of time management is restricting your length of answers to about 1500 words for each long essay and about 300 words for each short essay. You need to practice during your study period because writing is a skill. Take up the question that you can answer best, first. Keep the question you do not know the answer well, to answer last. Organize your answers into sections, with each section having headings and subheadings. Write line diagrams and annotate them. Give flow charts if they are relevant. In short, let the examiner know what you think the main points in your answer are by underling, circling and using a different coloured pen etc. This will enable the examiner to focus on relevant points in your answer with the shortest possible effort on his part.

MCQs are a little different. Even here, if you do not know the answer immediately, do not waste too much time thinking about the answer. Move on to the subsequent questions, which you may be able to answer easily. Also note if there is any negative marking in the examination schema; if there is, do not speculate. Read the stem of the question carefully; there may a subtle 'catch' in the question. Many times, the wrong choices given can be logically eliminated by careful thinking. Keep cool and analyse the stem and the distracters to choose the correct answer.

The Practical/ Clinical Examination and Viva Voce

The face-off round is always more critical than the theory examination round. Not only do you have to be quick in thinking but also your presentation and verbal skill are assessed and these can go a long way to help you sail through.

The advantage about the practical exam is that the practical skills are assessed in one session, and does not drag out over several sessions. The downside is that some students feel more stressed.

Rather than trying to act calm, tell the examiner if you are extremely nervous. He/she will do his/her best to calm you down and once you realise that the examiner is really on your side you will get on much better.

The basics remain the same. Read well, be confident, do not drink the night before the clinical and viva-voce. Your puffy eyes and foul mood will definitely be a strong give-away. This applies to the examiner as well as the examinee. The examiner needs to be just as prepared as the examinee.

1. Be neatly dressed.
2. If you are a dental be sure that your clinical patient reaches well in time to save you the heartburn and sinking feeling associated with fear of no-show by the test case.

3. Organize your self, both mentally and physically. Chaotic presentation, however brilliant it may be, will not fetch you star grades.

4. Be courteous to your examiner and gentle with your patient. Remember your examiner will be assessing all aspects of your work and woe.

5. Last but not the least; don't try to act over smart. Believe me, your act will be very transparent, and you will look like the emperor in his new clothes. Not really a pleasant sight.

In The Final Reckoning

Each level of education builds on what you have already learned. That is particularly true for the sciences, business and the arts. When a person studies a profession with the purpose of making that profession his life work, it is the best of the bunch, so to speak who do succeed and eventually reach the top of that profession. This would only be possible if you ignite your passion sufficiently enough to learn the difference between cramming and memorizing and truly enjoy the process of learning. Then the fear of exams and subsequent results might not dragonize themselves.

I honestly hope that at least a couple of things that I have written about will strike a chord with you and help you modify your approach to pass an exam. If I may thus succeeded it will truly be a fulfilling result in my quest to help you, because mate, I know how helpless one feels just before exams and how frustrating it is to wait for the results not knowing whether your efforts have paid off or not.

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How to get a PG Seat

Dr. Suhas Kalghatgi

The five and a half years of MBBS are probably the best times of any doctor's medical training. For five and a half years, one tries to comprehend the fascinating world of medicine, to understand its intricacies and to use that knowledge to help a fellow human being. It is only after one comes out of the shelter of these 51/2 years into the harsh reality that is medical practice that one realizes that without a post graduation degree, it is not possible to practice the medicine that one has learned and loved in his MBBS. In many ways, getting a PG seat is one of the most important and difficult obstacles that a young doctor faces. Not only is it a test of knowledge, but also a test of one's character and determination, a "trial by fire" wherein the student must prove himself worthy enough to be given the responsibility of practicing as a specialist.

One of the many reasons that the task of getting a PG seat is daunting to most is the fact that the undergraduate training system does not prepare us for this challenge. The instant one passes his undergraduation, the focus suddenly shifts from clinical and conceptual knowledge to factual knowledge such that facts and figures begin to matter more than patients and your skill in dealing with them. To come to terms with this shift in learning requires time, determination, planning and guidance.

It was in this search for guidance, to find the one perfect formula to crack the PG entrance examination , that I discussed at length with my seniors, colleagues, teachers and even strangers, only to realize that such a formula does not exist. Each person has to painstakingly build

and execute his own plan for getting through this ordeal. However, there are some ground rules that must be followed by every student aspiring for a PG seat.

Decide

> *"The world makes way for the man who knows where he is going."*
> Ralph Waldo Emerson

Working towards a PG seat is an enormous investment of time and effort and requires an unwavering conviction towards the goal. So before jumping into the fray for a PG seat, it is important to be aware of the various other career options available to a MBBS graduate.

Because of the increasing corporatization of the Indian healthcare system, the career options for a MBBS graduate have diversified like never before. Clinical research and hospital management are but a few of these options which offer tremendous potential for growth and are relatively easy to get in to. The five and half years of undergraduate study should have given you a fair idea as to whether you want to continue in the clinical practice or opt for these alternate branches. Hence the decision to start preparing for a PG seat should be an informed, self made decision and not just a tendency to get carried away by the mad rush for these seats by the frenzied majority.

There a host of courses available which include clinical, paraclinical and basic science courses and the most popular one is not necessarily the best one for you. Many of us often put off this decision until they get a rank but it is desirable to decide which branch you want and where is it that you want it. This will help you to tailor your preparation to suit the requirements for that exam.

The preclinical and paraclinical specialties are often easier to gain admission into and are in increasing demand due to the sudden proliferation of private medical colleges all over the country.

Research

> *"Know thy enemy"*
>
> Sun Tzu

To be able to successfully crack the entrance examinations for medical postgraduation, it is important to know the entire examination system inside out. The various intricacies of this examination system will often help focus ones effort on specific examinations to get the desired seat in the least possible time.

Each entrance exam has a distinctive pattern of questioning. The patterns of different exams vary in terms of the kind of knowledge tested, the number of questions, marking systems, and time allotted for solving the set questions. And to complicate issues further, these patterns are dynamic necessitating that one has to constantly keep updating oneself about the latest trends and patterns of these exams. Hence it is very important to go through the prospectus very carefully and familiarize yourself with the marks distribution for various subjects, the presence of negative marking and even the method of marking (pencil or pen, kind of shading of boxes).

The exams conducted by the central institutes like All India Institute of Medical Sciences, Delhi and PGIMER, Chandigarh are considered to be by far the most dynamic and demanding entrance examinations for medical postgraduate courses. These exams have a tendency to set complicated case scenarios as questions which require a thorough knowledge of not only disease diagnosis but also treatment protocols. PGIMER, Chandigarh stands out by allowing multiple correct answers in a single question.

At the other end of the spectrum of examination patterns are the state exams like Karnataka entrance examination for medical postgraduate courses which stick to simple straight forward "one liner" questions which test only your factual knowledge and little else. Some people

find these types of exams to be the most frustrating as these exams require a lot of memorizing of apparently inconsequential details.

Plan

> *"If you fail to plan, you plan to fail"*
> Anon

To get the PG seat of your choice in the shortest time possible, it is important to plan out your approach to the exam. There are some key areas which are often ignored by students and can be very important in getting a good rank.

The importance of old question papers:

It is important to understand that there is only so much of information from which an examiner has to set questions. This information is not limitless and hence the questions tend to be repeated year after year. In some examinations, the percentage of repeat questions can be as high as 60%! By solving the previous years' question papers, we are making sure that we do not miss a significant part of the questions.

Previously asked question papers also give you ideas as to what pattern of questions are asked. Some examinations like AIIMS (All India Institute of Medical Sciences, New Delhi) entrance examination tend to concentrate heavily on clinical scenarios whereas Karnataka entrance examination consists mainly of one line questions.

Most questions in entrance exams tend to be sourced from very specific and constant topics. Again being thorough with the previous question papers can give information regarding which topics the questions will be sourced from.

It is because of the above mentioned reasons that many exams do not release the question papers. The various MCQ books available in the market will help to gather as many questions as possible.

Hence the information derived from studying these question papers should be the basis for formulating your entire plan of action.

Time Distribution: Reading smart instead of reading hard

One of the common mistakes that students make is to devote a lot of time to large voluminous subjects like general medicine and general surgery. But in reality, these subjects are low yielding in terms of the final score. The amount of effort required to cover these subjects thoroughly is not equivalent to the improvement in your exam scores. Let us take for example that there are 20 questions out of 100 sourced from general medicine. Usually around 50% of these questions (10 questions in this example) are simple and hence most students will be able to solve them. To be able to solve 100% of these questions, it will require months of studying general medicine only and the gain is only 10 more questions. In contrast, topics like Orthopaedics, ENT, Ophthalmology, Skin &STD, Radiology and Biochemistry do not require much time to study (usually a week or so for each topic) and yet always have a substantial number of questions sourced from them. Hence it is advisable to study these high yielding topics thoroughly first and then if time permits, try to study the larger topics.

And finally, after having invested months of effort into reading the subjects, it is of utmost importance to allot the last month or so before the exams to revision without which your entire preparation will be essentially useless.

What to read? Theory or MCQ's:

As I have mentioned before, preparation for entrance examination is a highly individualistic process and the decision to concentrate on theory or MCQ's is a personal choice. However, reading only theory by studying textbooks page to page is very time consuming and low yielding. What seems important to you while reading a textbook may not be, and usually, is not important from the entrance examination point of view. The best approach would be to solve a MCQ and then

read the relevant information from the textbooks. As you solve more and more MCQ's, you realize that the MCQ's tend to be concentrated into some specific topics. Be well versed with these topics.

D-Day: Do and Don't's in the examination hall

Time management:

Entrances like All India Entrance Examination involve solving 300 questions in 3 ½ hours. That gives us less than one minute to solve one question. This can be quite daunting if you have not anticipated this problem and trained for it. The best way to manage your time is to solve question papers by setting the same time limit as in the actual exam. During the examination, keep checking your pace of solving questions so that you complete all the questions with 10 minutes to spare.

Attention to details:

Carry the appropriate writing material and hall ticket

Make sure you enter the roll number properly

Make sure you do not make mistakes in marking by checking the question number and the number on the answering sheet match before you mark the option.

Learn from your mistakes

> *"Discouragement and failure are two of the surest stepping stones to success"*
>
> Dale Carnegie

Each examination is an invaluable opportunity to perfect your technique of solving MCQ's. Make it a habit to critically analyze the mistakes that you make in each exam and take corrective measures to ensure that it does not happen again. It is natural to feel dejected after an unsuccessful attempt but one should realize that success will be

achieved only by utilizing these failures to the maximum.

The luck factor

> *"I find that the harder I work the more luck I seem to have."*
> Thomas Jefferson

It is a popular misconception that cracking the entrance examinations requires a lot of luck. This misconception is carried by many into the examination hall, and it results in many trying out their luck with questions rather than make an active attempt to solve it. It is true that some luck does matter and in my opinion, it accounts for only 5% of one's chances to crack the exams. Luck can perhaps make a difference of a few ranks at best, but the only thing that will make sure you are amongst the top few ranks will be the effort which you have put in.

Conclusion

There is no mistaking the fact that getting a PG seat of your choice is a Herculean task. And there is no single fool proof method of completing this task. However, any PG aspirant should remember that though difficult, this task is not impossible. Thousands manage to do it every year and so can you. All it takes is a whole lot of effort with a proper plan... and of course the 5% of good luck.

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14

How to Choose a Speciality in Medicine

Dr. M. Maiya

It is relevant to discuss how students/parents select medical profession before discussing how to choose medical sub super specialties.

Medical seats and in recent years engineering, are the ones mostly sought after by the students. This trend is mainly due to job opportunities both in India and abroad, amount of salary, and standing of the profession in the society. Some opt for the particular profession because the parents are doctors and engineers. There are indeed only a few who take decisions on the basis of their interest and many a time one makes decision under the force of circumstances.

The first problem the medical graduate has to settle is whether to continue the studies or remain as a family physician. In recent years there is always a hesitancy to take up family practice as the patients have a tendency to consult a specialist always for all ailments. The traditional role of a family physician is eroded with the advent of sub/super specialties. With the result, patients are wrongly directed, investigated and treated improperly. Recently, the western world realized the defect and rediscovered the role of family physician as a guide and philosopher. His holistic approach to the medical problems is more and more realized. Hence many countries including India have introduced the specialty of family physician in their board examinations.

When one is determined to be a "super specialist", next question is what specialty? When one gets M.D. degree, if he decides to be a

"super-specialist", how to choose the subject? Various aspects to be considered are:

1. Interest: Interest in a particular subject should be the basic criterion for the selection of specialty. This is realized by only a few.
2. Financial consideration and glamour: "Cardiology is a glamorous subject and fetches more money, especially when invasive procedure is performed and society considers cardiologists as "great".
3. Opportunity: There are number of specialties like Rheumatology, Haematology, Pulmonology and until recently Diabetology, which are under-represented and there is more opportunity for successful practice.
4. Availability of seats: If one is not particular about any subject, or interested in several subjects, it is worth looking for availability of seat in a good college.
5. Teachers: Many a time interest in the subject is influenced by good teachers, who may act as "role model".

Hence, it not always easy to select the specialty subject, and many a time you land in an area where you are not interested. After joining the course unwillingly, there are many who get interested later due to various influences and makes a successful career. The following algorithm may help in the selection of specialty.

SPECIALTY SELECTION									
College Status	Interested specialty			Specialty not interested			Speciality not particular		
	Good	Medium	Poor	Good	Medium	Poor	Good	Medium	Poor
	Select	May Select	Select*	Select	Select*	Do not Select	Select	Select	Select*

* on other considerations – Fees, accommodation, place

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Section II

Ethical Issues and Work Ethics

"The way in which sciences, natural and social, have to be employed is studied by ethics and philosophy"

Dr. S. Radhakrishnan

"Bio-medical research has acquired dimensions which are at once exciting & awesome. It raises some difficult issues of ethics which need to be dealt with sensitivity to human values and with great circumspection"

Hon. Justice Sri, M.N. Venkatachaliah

15

Professionalism and Work Ethics

Prof. K.R. Sethuraman.

Medicine, like Law and Education, is a profession and medical doctors are professionals. Therefore, we ought to have a clear understanding of what "professionalism" means. Every medical student, by experiential learning, will develop a personal concept of what it means to be a professional. The purpose of this article is to make explicit what has been implicit in the medical curriculum.

The words "profession" and "professional" are derived from the Latin word "professio," which means a public declaration of a promise. Professions are groups, whose members declare publicly their promise to perform their vocation in a certain manner acceptable to the society and that the professional group and the society may discipline those who fail to do so. The profession works for benefit of the society and society accepts the profession, expecting it to serve some important social goal. Every profession usually issues a code of ethics stating the standards by which its members can be judged. The ancient and traditional professions are Medicine, Law, Education and Clergy; more recently, Nursing, Engineering, Management, Information Technology, Biotechnology, etc have evolved in to Professions.

The universal principles that characterize a profession are:

1. Competence in a specialized body of knowledge and skill
2. An acknowledgment of specific duties and responsibilities toward the individuals it serves and toward society.
3. The right to train, admit, discipline and dismiss its members for

failure to sustain competence or observe the duties and responsibilities

Professionals versus Amateurs - a Comparison

A professional learns every aspect of his/her job. An amateur skips the learning process whenever possible.

A professional carefully discovers what is needed and wanted by the client. An amateur assumes what others need and want.

A professional looks, speaks and dresses like a professional. An amateur is sloppy in appearance and speech.

A professional keeps his or her work area clean and orderly. An amateur has a messy or unclean work area.

A professional is focused and clear-headed in his/her dealings. An amateur is fuzzy and distracted.

A professional does not let mistakes slide by. An amateur ignores or covers up mistakes.

A professional faces up to the challenge of difficult assignments. An amateur tries to wriggle out of difficult tasks.

A professional completes projects as per commitment, despite personal inconveniences. An amateur lets personal inconveniences interfere with job on hand and therefore is often surrounded by unfinished work.

A professional handles money and accounts very carefully. An amateur is sloppy with money or accounts.

A professional faces up to clients' problems and difficulties. An amateur avoids clients' other problems.

A professional displays better emotional tones like enthusiasm, cheerfulness, interest and competence. An amateur uses lower emotional tones like anger, hostility, resentment, fear.

A professional persists until the objective is achieved. An amateur gives up at the first hurdle.

A professional strives for excellence and often produces better outcome than expected. An amateur aims to do just enough to get by.

Profession and Business - a Comparison

At times differentiating a business from a profession may be difficult as professionals may engage in business dealings and make a living by it. However, one crucial difference distinguishes them: professionals have a fiduciary duty toward those clients they serve. "Fiduciary duty" means that the professionals have a responsibility and a duty to assure that their decisions and actions serve the welfare of their patients or clients, even at some cost to themselves. Every profession has its own code of ethics, which specify the obligations arising from this fiduciary duty. Ethical dilemmas occur when there appears to be a conflict between professional obligations based on fiduciary duties and personal ambitions.

The other differences are:

"Buyer beware" principle applies to business; in a profession, the provider has to guide the client to make an informed decision. For example if a patient seeks what, in your opinion is an unnecessary investigation, then as a professional, you have to try and convince the patient why it is an unnecessary or a harmful option.

Profit is the primary reward in a business; job satisfaction is the primary reward in a profession and financial rewards are secondary.

Professionalism in the 21st Century

"A Physician Charter: Medical Professionalism in the New Millenium" was issued jointly by the The American Board of Internal Medicine, the American College of Physicians and the European Federation of Internal Medicine in 2002. Subsequently, 90 professional associations of Western Medicine have endorsed the Charter.

The three fundamental principles of professionalism are:

1. Primacy of patient welfare (aligns with Beneficence and Non-Maleficence principles of ethics).
2. Patient autonomy (aligns with similar principle of ethics).
3. Social justice (aligns with Equality and Justice priciples of ethics).

Professional responsibilities that are derived from these principles are commitment to:

Competence

Honesty with patients

Confidentiality

Appropriate relationship with patients

Improving quality of care

Improving access to care

Just distribution of finite resource

Scientific knowledge

Maintaining trust by managing conflicts of interests and to

Professional responsibilities.

The last commitment to professional responsibilities may appear vague; the "Good Medical Practice" guidelines make them explicit.

Good Medical Practice (2006)

The duties of a doctor have been listed by General Medical Council, UK in its guidelines to the new doctors registered by GMC.

Patients must be able to trust doctors with their lives and health. To justify that trust you must show respect for human life and you must:

Make the care of your patient your first concern.

Protect and promote the health of patients and the public

Provide a good standard of practice and care

- Keep your professional knowledge and skills up to date
- Recognize and work within the limits of your competence
- Work with colleagues in the ways that best serve patients' interests

Treat patients as individuals and respect their dignity

- Treat patients politely and considerately
- Respect patients' right to confidentiality

Work in partnership with patients

- Listen to patients and respond to their concerns and preferences
- Give patients the information they want or need in a way they can understand
- Respect patients' right to reach decisions with you about their treatment and care
- Support patients in caring for themselves to improve and maintain their health

Be honest and open and act with integrity

- Act without delay if you have good reason to believe that you or a colleague may be putting patients at risk
- Never discriminate unfairly against patients or colleagues
- Never abuse your patients' trust in you or the public's trust in the profession.

You are personally accountable for your professional practice and

must always be prepared to justify your decisions and actions.

Summing Up - Obligations and Values of a Doctor

Professionalism in health care requires that the practitioner strives for excellence in the following areas which should become part of the attitudes, behaviors, and skills integral to patient care:

Altruism: commitment to attend to the best interest of patients, rather than self-interest.

Accountability: be accountable to the patients, to society on issues of public health, and to the profession.

Excellence: commit to life-long learning and continuous professional development.

Duty: A doctor should be available and responsive when "on call," accepting a commitment to service.

Honor and integrity: commit to being fair, truthful and straightforward in interactions with patients and the profession.

Respect for others: demonstrate respect for patients and their families, other healthcare professionals and team members, medical students and trainees.

These values provide guidance for professional behavior and when faced with ethical dilemmas, for making ethical decisions.

Annexure

Extracts from Code of Ethics Regulations, 2002. Medical council of India.

CHAPTER 2 - DUTIES OF PHYSICIANS TO THEIR PATIENTS

2.1 Obligations to the Sick

2.1.1 Though a physician is not bound to treat each and every person asking his services, he should not only be ever ready to respond to the

calls of the sick and the injured, but should be mindful of the high character of his mission and the responsibility he discharges in the course of his professional duties. In his treatment, he should never forget that the health and the lives of those entrusted to his care depend on his skill and attention. A physician should endeavour to add to the comfort of the sick by making his visits at the hour indicated to the patients. A physician advising a patient to seek service of another physician is acceptable, however, in case of emergency a physician must treat the patient. No physician shall arbitrarily refuse treatment to a patient. However for good reason, when a patient is suffering from an ailment which is not within the range of experience of the treating physician, the physician may refuse treatment and refer the patient to another physician.

2.1.2 Medical practitioner having any incapacity detrimental to the patient or which can affect his performance vis-à-vis the patient is not permitted to practice his profession.

2.2 Patience, Delicacy and Secrecy : Patience and delicacy should characterize the physician. Confidences concerning individual or domestic life entrusted by patients to a physician and defects in the disposition or character of patients observed during medical attendance should never be revealed unless their revelation is required by the laws of the State. Sometimes, however, a physician must determine whether his duty to society requires him to employ knowledge, obtained through confidence as a physician, to protect a healthy person against a communicable disease to which he is about to be exposed. In such instance, the physician should act as he would wish another to act toward one of his own family in like circumstances.

2.3 Prognosis: The physician should neither exaggerate nor minimize the gravity of a patient's condition. He should ensure himself that the patient, his relatives or his responsible friends have such knowledge of the patient's condition as will serve the best interests of the patient and the family.

2.4 The Patient must not be neglected: A physician is free to choose whom he will serve. He should, however, respond to any request for his assistance in an emergency. Once having undertaken a case, the physician should not neglect the patient, nor should he withdraw from the case without giving adequate notice to the patient and his family. Provisionally or fully registered medical practitioner shall not willfully commit an act of negligence that may deprive his patient or patients from necessary medical care.

2.5 Engagement for an Obstetric case: When a physician who has been engaged to attend an obstetric case is absent and another is sent for and delivery accomplished, the acting physician is entitled to his professional fees, but should secure the patient's consent to resign on the arrival of the physician engaged.

CHAPTER 3 - DUTIES OF PHYSICIAN IN CONSULTATION

3.1 Unnecessary consultations should be avoided:

3.1.1 However in case of serious illness and in doubtful or difficult conditions, the physician should request consultation, but under any circumstances such consultation should be justifiable and in the interest of the patient only and not for any other consideration.

3.1.2 Consulting pathologists /radiologists or asking for any other diagnostic Lab investigation should be done judiciously and not in a routine manner.

3.2 Consultation for Patient's Benefit: In every consultation, the benefit to the patient is of foremost importance. All physicians engaged in the case should be frank with the patient and his attendants.

3.3 Punctuality in Consultation: Utmost punctuality should be observed by a physician in making themselves available for consultations.

3.4 Statement to Patient after Consultation:

3.4.1 All statements to the patient or his representatives should take

place in the presence of the consulting physicians, except as otherwise agreed. The disclosure of the opinion to the patient or his relatives or friends shall rest with the medical attendant.

3.4.2 Differences of opinion should not be divulged unnecessarily but when there is irreconcilable difference of opinion the circumstances should be frankly and impartially explained to the patient or his relatives or friends. It would be opened to them to seek further advice as they so desire.

3.5 Treatment after Consultation: No decision should restrain the attending physician from making such subsequent variations in the treatment if any unexpected change occurs, but at the next consultation, reasons for the variations should be discussed/explained. The same privilege, with its obligations, belongs to the consultant when sent for in an emergency during the absence of attending physician. The attending physician may prescribe medicine at any time for the patient, whereas the consultant may prescribe only in case of emergency or as an expert when called for.

3.6 Patients Referred to Specialists: When a patient is referred to a specialist by the attending physician, a case summary of the patient should be given to the specialist, who should communicate his opinion in writing to the attending physician.

3.7 Fees and other charges:

3.7.1 A physician shall clearly display his fees and other charges on the board of his chamber and/or the hospitals he is visiting. Prescription should also make clear if the Physician himself dispensed any medicine.

3.7.2 A physician shall write his name and designation in full along with registration particulars in his prescription letter head.

Note: In Government hospital where the patient–load is heavy, the name of the prescribing doctor must be written below his/her signature.

CHAPTER 4 - RESPONSIBILITIES OF PHYSICIANS TO EACH OTHER

A physician should consider it as a pleasure and privilege to render gratuitous service to all physicians and their immediate family dependants.

4.2 Conduct in consultation : In consultations, no insincerity, rivalry or envy should be indulged in. All due respect should be observed towards the physician in-charge of the case and no statement or remark be made, which would impair the confidence reposed in him. For this purpose no discussion should be carried on in the presence of the patient or his representatives.

4.3 Consultant not to take charge of the case: When a physician has been called for consultation, the Consultant should normally not take charge of the case, especially on the solicitation of the patient or friends. The Consultant shall not criticize the referring physician. He / she shall discuss the diagnosis treatment plan with the referring physician.

4.4 Appointment of Substitute: Whenever a physician requests another physician to attend his patients during his temporary absence from his practice, professional courtesy requires the acceptance of such appointment only when he has the capacity to discharge the additional responsibility along with his / her other duties. The physician acting under such an appointment should give the utmost consideration to the interests and reputation of the absent physician and all such patients should be restored to the care of the latter upon his/her return.

4.5 Visiting another Physician's Case: When it becomes the duty of a physician occupying an official position to see and report upon an illness or injury, he should communicate to the physician in attendance so as to give him an option of being present. The medical officer / physician occupying an official position should avoid remarks upon the diagnosis or the treatment that has been adopted.

CHAPTER 5 - DUTIES OF PHYSICIAN TO THE PUBLIC AND TO THE PARAMEDICAL PROFESSION

5.1 Physicians as Citizens: Physicians, as good citizens, possessed of special training should disseminate advice on public health issues. They should play their part in enforcing the laws of the community and in sustaining the institutions that advance the interests of humanity. They should particularly co-operate with the authorities in the administration of sanitary/public health laws and regulations.

5.2 Public and Community Health: Physicians, especially those engaged in public health work, should enlighten the public concerning quarantine regulations and measures for the prevention of epidemic and communicable diseases. At all times the physician should notify the constituted public health authorities of every case of communicable disease under his care, in accordance with the laws, rules and regulations of the health authorities. When an epidemic occurs a physician should not abandon his duty for fear of contracting the disease himself.

5.3 Pharmacists / Nurses: Physicians should recognize and promote the practice of different paramedical services such as, pharmacy and nursing as professions and should seek their cooperation wherever required.

Available at *http://www.mciindia.org/know/rules/ethics.htm* (accessed on 8-2-2008)

Further Reading

K.R. Sethuraman. Professionalism in Medicine. An invited article downloadable with this link:

http://www.searo.who.int/LinkFiles/Regional_Health_Forum_Volume_10_No_1_01-Professionalism_in_Medicine.pdf (accessed on 8-202008).

16

Changing Trends in Medical Ethics

Dr. KS Shekar

During the Vedic period, great institutions of learning existed in India - namely Taxila, Nalanda and Varanasi. They were truly university campus of repute. Nalanda said to have as many as 40,000 students within its walled campus. The education was totally free, so also boarding and lodging of the students. Institutions were funded by the king and nobles in the court.

Beyond these great universities, students went to learn Medicine in Gurukulas and even with a single preceptors or Guru. Institutions like dispensaries and hospitals did exist during those days and were attached or located near or within the temple compound.

The Indian society was governed by the principles of Varnashrama dharma. Persons doing noble tasks were called brahmins. They were responsible for three duties: Vaidika, Vidya and Vaidya. That is to say, all that are connected with rituals to God, education and treating the sick. They earned no wages, but lived on alms. A brahmin was supposed to go to only five houses in a day and ask for alms. If they get something, fine. Other wise they had to starve. Education and caring for the sick, were always free. They were noble and invaluable deeds indeed. So a teacher was considered a true God and healer, next only to God.

Four gifts are spoken of by the sages:

"Gift of assurance and security to the frightened; Appropriate medicine to the diseased;Education of the science to the students who ask for them and food for the hungry".

But gift of health is the greatest of all the gifts.

" Just as the end of the sky is not understandable even by the Gods, similarly there does not indeed exist any sort of limit for the (merit one secures by the) gift of health". - Skanda purana

In the days of lore, be Indian or in any other civilization, ethics generally guided the day-to-day life. There was no need for written down laws, rules and regulations. The great Indian treatise Charaka Samhita and Sushruta Samhita laid down the principles to be followed by a teacher, student and a medical practitioner.

Only such of those students who are

'peaceful, noble in disposition and not given to mean acts, Free from ego,Intelligent, endowed with powers of reasoning and memory, Generous in mind, modest and gentle Courteous, not greedy or lazy and obedient .....' (Chanakya Sutra : Vi 8-8) are taught medicine.

A student was expected to take an oath of diligence and good behaviour before starting his education. At the same time a teacher was expected to impart education without bias or favour. He would make a promise to that effect.

Both Charaka Samhita and Sushruta Samhita do insist on both the student and teacher to obligate each other before a student is initiated into medical education. Charaka Samhita further lays down the code of conduct for the physicians.

"Your action must be free from ego, vanity, worry , agitation of mind or envy ; your actions must be carefully planned, with concern for the patient and in keeping with the instructor's advice.

Your unceasing efforts must, at all costs be directed towards giving health to the suffering patients (aturanam arogya). Your speech must be soft, pleasant, virtuous, truthful, useful and moderate. Your efforts must be unremitting. Even when you are learned and proficient, do not show off".

Contemporary of Charaka and Sushruta in eastern civilization were Hammurabi, king of Babylon who laid down the code of laws for his people including physicians. Subsequently, but before Christ, Zoroastrianism had great influence over the middle east – ' good thoughts', 'good words' and 'good deeds' were the simple principles of their philosophy which were also the basis of practice of medicine.

The birth of rational medicine in the west was due essentially to Greek Philosophers. Hippocrates was undoubtedly the greatest of the physicians of that period who was responsible for discarding divine influences on disease process and proclaimed that his objective was to take away suffering or atleast to alienate it.

Hippocrates is credited with codification of medical practice in the western culture. Hippocratic Oath is the most popular document in medicine, on which every one is expected to swear.

'I will use my power to help the sick to the best of my ability and judgement'.

'I will abstain from harming or wronging any man by it'

Principle contained in the Hippocratic medicine can be summarised as under:

1. Patient is more important than the disease.
2. Be honest unto thyself
3. Nature heals – assist it or atleast do no harm.
4. Good thoughts, good words and good deeds.

World Health Organization laid down international code of Medical Ethics during 1983 for the guidance and compliance by the member nations.

A physician shall always maintain highest standards of professional conduct.

Motives of profit shall not influence his judgement and duties towards his patient.

He shall strive to expose physicians deficient in character or competence or who engage in fraud or deception.

Following don'ts are noteworthy:

Shall not advertise.

Shall not receive any fee or payment to procure referral.

Medical Council of India has introduced amendments to its Act during 2002 named professional conduct, etiquette and ethics, salient features of which are as under:

1. All physicians must attend CME programmes of atleast 30 hrs, every five years.
2. Suffix only recognised medical degrees and also the council registration number.
3. A physician is free to choose whom he will serve except in emergency.
4. A physician shall not claim to be a specialist unless he has special qualification.
5. Cross pathy' practice is not permitted.
6. All investigations and cross consultations must be justifiable.
7. Physician must announce his fees before rendering service.
8. Incapacitated physician is not permitted to practice.
9. Cannot employ any unqualified attendant in his practice.
10. Advertising in any form is not allowed.
11. Shall not receive or offer "cuts" or commissions to enhance his practise.

12. Euthanasia, prenatal sex determination tests are not permitted.

Why this discussion on Medical Ethics? There has been a demand to introduce teaching of Medical Ethics as a subject both in undergraduate and postgraduate levels. Are Ethics constant or changing principles in life?

For a righteous man, laws are not required; for a non-righteous man presence of law is non-consequential, because he knows how to circumvent law and get things done.

But a constant reminder of Ethics is necessary, because most of us believe that what we think is the right.

An ethical act is one, which is a righteous act, which you will do at all times, even when others do not observe and of which you are never ashamed of.

Honesty, integrity, truth, love and compassion are unchangeable ethical principles. In the ancient days, ethics guided the human actions with in a society. When more and more citizens were deviating from ethical practice, society enacted laws and made them bounden to the people.

Thus, we can have actions that are:

morally right and legally right,
morally right but legally wrong,
morally wrong and legally right,
and morally wrong and legally wrong.

Let us consider the following subjects and their ethical status now.

Right to Life: Beginning and End

Medical Termination of Pregnancy

Medical Termination of Pregnancy Bill 1971 has made abortion liberal. This is one of the areas where the ethical dictates have given way to social needs.

"I will maintain the utmost respect for human life, from the time of conception" says the Geneva Declaration of WHO, 1948.

The universal Declaration of Human Rights in article 3 says: " Everyone has the right to life, liberty and security of person". This concept has been further reiterated in the International Covenant on Civil and Political Rights in article 6 which says : " every human being has the inherent right to life".

The question is when does life start ? if is generally accepted that personhood comes from the time fertilization occurs.

MTP Act 1971 provides that pregnancy can be terminated only on medical grounds. What was originally thought to be a medical indication has become a social need, as a means for population control and to put an end to clandestine abortions conducted by unqualified persons.

Under the guise of MTP, a new social evil has cropped up -

"Female Foeticide". Pre-birth sex-determination is believed to have resulted in large-scale female foeticide in this country, which is reflected in successive census. A bill 'Banning of prebirth sex-determination Test' has been introduced in the parliament in 1990 and also an " Amendment to MTP bill" during the same year. These clearly declare that "sex determination tests and selective abortion or female foeticide amount to misuse of science and technology, social oppression of women and abuse of human rights".

Euthanasia

Ethical dilemma arises when the part played by the medical profession is under scrutiny in the practice of euthanasia, whether it is voluntary or non-voluntary, active or passive. In all instances there is commission or omission on the part of the profession.

Abandoning elderly and frail Americans at hospital emergency rooms is a new phenomenon known as "granny dumping".

'When the values are eroded, first to be affected are those at either end of spectrum of life'.

When you talk to any of your friends who are past 60 years, the common apprehension they have today is of facing the old age and they hope and pray that they will receive an honourable death.

Euthanasia was initiated in Germany during the early 1930's and had the support of the medical profession. If was directed at terminally ill patients. Later it grew to be genocide.

After the Nuremberg trials (1945) the British Medical Association observed:

"They (the doctors) departed from the traditional medical ethics which maintain the value and sanctity of every individual human being ..... They betrayed the trust society had placed in them as a profession ....." British Medical Association still maintains (1988): "The law should not be changed and deliberate taking of a human life should remain a crime. The rejection of a change in the law is affirmation of the supreme value of the individual, no matter how worthless others and that individual may feel".

The Indian Society has been permitting active and voluntary euthanasia from a long time. The act "entered Samadhi" by a god-man literally means that the old saint or guru, having handed over the reigns of his ashram to his successor and having no further necessity to live in this world, enters the Samadhi. He does not accept any food or water and dies of inanition and dehydration. This is what Sri Vinobaji did only a few years back. Even the state did not stop him from euthanasia!

Organ Transplantation:

Most commonly, with a good success rate, kidney transplants are done in our country. The success rate is high, in case of live donors compared to ones that are harvested from dead persons. Supply and

demand of organs being disproportionate, organ donation soon became a flourishing business.

In the absence of any law, surgeons did kidney transplants in many centres in India. Most of us then felt that organ transplantation from a live non-related donor was legally right, though morally wrong. When the racket bust, the Government enacted the law and framed rules. They defined brain death and permitted harvesting of organs from brain dead person for transplantation of such organs. They constituted committees to screen and approve all live donor transplantation. Live donor has to be a relative.

What was thought to be legally right and morally wrong was infact both legally and morally wrong. But now, thanks to the Government's interference, if has become legally right while still being morally wrong.

Human organs cannot be treated like any other property owned by a person. Nor can the doctors perform an operation on a person, which does not do good to that person. "Sale" proceeds cannot mitigate the danger entailed by the donor.

'Uniform Anatomical Gift Act', U.S.A gives permission for organ transplantation from dead bodies only and gives blanket protection against any law suits.

The Council of Europe permits removal of organs both from the dead and living person. In U.K the Organs Transplant Act come into existence in 1989. Indian Act is along the same lines. "WHO Guiding Principle on Human Organ Transplantation" as adopted by World Heath Assembly, 1991, permits removal of organs both from deceased and living persons for purpose of transplantation.

Regarding live donors, WHO stipulates that the donor should be genetically related to the recipient, except in transplantation of bone marrow or other acceptable regenerative tissues. Donations due to

pressure, financial consideration, from a minor, and advertisements in lay press etc., are prohibited. Most important of all is that the transplantation should be considered only on medical grounds and not on financial merits.

Research and Human Experimentation

There is enormous literature available on ethical guidelines on human experimentation. First statement on using human subjects for medical research came as Nuremberg code of 1947, which emphasized consent and voluntariness. In 1948, Universal Declaration of Human Rights (adopted by the General Assembly of the United Nations) expressed concern about human beings being subjected to involuntary maltreatment. The International Covenants on civil and political rights in 1966 specially stated, "no one shall be subjected without his consent to medical or scientific treatment". Declaration of Helsinki (1964) formulated by the World Medical Association has laid down general principles on using human subjects in medical research. Indian Council of Medical Research has released a "Policy statement on Ethical considerations involved in Research on Human Subjects" during 1980. In 1997, ICMR appointed a consultative committee under the chairmanship of Justice Shri. M.V. Venkatachalaiah former Chief Justice of India, and Chairperson of National Human Rights Commissionto review the "Guidelines on Biomedical Research involving Human Subjects". But there appears to be no guidelines on human experimentation in surgical procedures.

Development of new surgical techniques is a continuous "err and correct" process without any rigid criteria for such experimentation as is present for introduction of new drug formulations. It can be seen that during our own life time, the operations once considered as a panacea are being given up. By the time new knowledge comes in, many a limb has been amputated, many more organs removed and body mutilated. Typical example is the total change in the concept of management of breast cancer.

Research Publications – How True Are They?

I still remember the words of Dr. Goldwin, Editor, American 'Journal of Plastic and Re-constructive Surgery' in his keynote address to XI PRS Congress at New Delhi. "In the land of Gandhi, I can only speak the truth" and went on to say how the papers presented in various journals in the world are manipulated to give only the good results; excellent photographs, in may instances it may be the only ones.

" Publish or Perish" has been the slogan among medical profession in the west. If you need confirmation in the job, promotion, faculty positions etc. you have to have a long list of publications in your C.V.

The article "Fake" by Dr. T. J. Hamilton in BMJ Dec. 1981 is very revealing. Story of Alsabti, a Jordanian in the United States for post graduate training published over 60 papers in Japanese and European journals, just by stealing research grant papers received by his chief. An interesting story about an Indian who plagiarized an article sent to his chief who was referee of New England Journal of Medicine, which was made to be rejected by the referee in the first place, is an eye opener.

A resident at the famous Sloane Kettering Institute in New York almost claimed in 1973 that he had solved the problem of transplant rejection. All that he did was to fake the graft on white mice by this black feltpen, to show that it has come from an unrelated animal. Still more shocking is the publication of experimental data by Mark Specter in association with respected biochemist Effraim Racker of Cornell University. They claimed that they found a cure for cancer by manipulating the DNA by a virus. The discovery was so brilliant that it was strongly tipped for Nobel Prize. But it was all faked and the bubble had to burst.

Drawin's Theory of Evolution was further faked and forged by this successors. Lamarkian in 1867 introduced an additional chapter in the Darwin's book 'Origin of Species'. The findings of Lamarkian had

been preceded by Mendel by two years, who was thoroughly ignored till 1900. Many of the findings of Lamarckian had been faked and even Mendel himself had to correct his findings after he was also exposed. Worst story is that of Prof. Ernst Hackle, the famous biologist, who proposed the theory that embryo, retraces its evolutionary history in-utero. To prove his theory he produced illustrations of three embryos of human, dog and rabbit, all three being identical. Infact he had printed same plate three times and labeled them differently. He was charged with fraud and convicted by a University Court at Jena. He defended himself saying: "... hundreds of best observers and biologists lie..."

Manipulation of numbers and fraudulent and misleading publications are found in our society also. Before they get exposed and discredited by the profession, it is better that the frauds are not perpetuated.

Best way is, if you have nothing new to say, do not say anything.

Qualified Quacks:

As per the international code of Medical Ethics it is the responsibility of a physician to expose such of those physicians who are deficient in character or competence and who engage in fraud or deception. The law can handle unqualified persons posing as physicians. What we ought to be afraid of are the qualified quacks that run down the profession.

How to identify a quack? Chanakya Sutra gives a list Persons:

Praising themselves

Dressed overbearingly as a physician

Frequents the houses of patients by sheer greed

Visit, even without being called to treat

Proclaim loudly so that patients can hear

Point out repeatedly defects in other physicians

Make friendship with patient

Should there be no improvement, blame other causes, and

Desert the patient when death approaches.

Essential Drug Concept and Rational Use of Drugs

It is unfortunate that even after high levels of education, doctors in general rely on pharmaceutical firms and their representatives to get educated about drugs and drug therapy. The spate with which the newer generations of antibiotics get successfully launched in the country is a true reflection of the total sell out of the medical profession to the sales gimmicks of the pharmaceutical companies.

Take for instance, in most parts of the world there is a restriction to the use of antibiotics beyond first generation Cephalosporin. There has to be positive bacteriological proof for such a use. Do we practice this norm?

Time and again we have read reports that hospital hygiene can be maintained by just washing the place with soap and water. We use enormous quantity of antiseptics. We also use them with the hope that they sterilize our surgical instruments, which is not only not true but also injurious to the patient. What about the numerous antibiotic creams used on the wounds? They contribute to the development of resistant organisms as well as allergic status in the patient. Why do not we, stop using these ointments?

The truth is that in this country, drugs substitute for caring, which is unfortunate.

There is a long list of guidelines in "Ethical criteria for medical drug promotion" adopted by WHO in 1988. The Pharmaceuticals main objective in their promotional work is only to increase the sales and more profit. I do not think anyone is concerned about the patient care. Why should we be part of it?

It is said that only 220 formulations is all that is required for 90% of treatable ailments to keep the nation healthy, as per WHO assessment. Despite adequate laws being present in our country, we have not been able to stop unnecessary and unwarranted formulations in this country. There are over 60,000 drug formulations in the country.

The Drugs and Cosmetics Act, 1940, amended in 1982 says in section 26-A that the Central Government has the power, in the interest of the public to prohibit manufacture, sale or distribution of such drugs or cosmetics that it considers injurious to the health of the people or animals.

Further "The Drugs and Magic Remedies (Objectionable Advertisement) Act", 1954, prohibits promotion and advertisement of any drugs having magical cure, specially in relation to certain disease and disorders.

Laws are there; but no will to enforce them.

Still we do not have a National Drug Policy and unfortunately drugs and its related matters are not under Ministry of Health, but under Ministry of Chemicals!

AIDs and HIV Positive Patients

What should be the attitude of a doctor towards AIDS and HIV Pos. proven patients? Can we refuse to treat them?

There is a Goa Act on AIDS. Government of India forwarded AIDS Prevention Bill 1989 (Bill No. 20 of 1989) and withdrew the same after many ethical and legal problems were raised. However, there are Government of India guidelines which direct surveillance of all foreigners who would like to stay in India beyond one year with laboratory tests for HIV. It also provided for deporting HIV Pos. foreigners.

What is the responsibility of surgeons and the institutions towards protecting their staff from getting accidentally infected by HIV? It is

easy to say that one should take universal preventive measures for all cases. This is not easy. Today all blood donors are to be screened for HIV. Why not all patients undergoing surgery? In Bangalore, in few hospitals, all patients undergoing surgery have to undergo HIV screening. Of course, this is supposed to be done with their consent. No patient is turned out for being HIV positive. But everyone has to be extra alert while operating. I fully contribute to the idea that all patients undergoing surgery or for that matter admitted in hospitals must undergo HIV screening. This should be a part of the HIV surveillance program since the Government is planning to contain the disease.

Every surgery costs few thousands of rupees, so also the investigations. If you take the overall cost of treating a surgical patient, the cost involved in screening for HIV is negligible, compared to the protection it offers.

Can a doctor refuse to treat a patient suffering from AIDS or one who has a HIV positive test report? Ethically speaking no. Can the hospital paramedical staff refuse? Do you have a right to expose your staff to such a disease?

Medical Council of India Code of Medical Ethics say that the doctor is not bound to treat each and every one seeking his services, except in emergencies. He is free to choose whom he will serve. General Medical Council (UK) says, "It is unethical for a doctor to refuse to treat or examine a patient for the sole reason that the patient's condition may put the doctor at personal risk". The opinion in USA is, "It is unethical not to give a sick or dying patient appropriate treatment whatever the reason".

We have already had few deaths among surgeons, in the recent past due to hepatitis B infection and its sequelae. We also had a surgeon dying due to AIDS which he supposed to have contracted during his professional duty. Are these not good enough reasons for screening all patients seeking surgical treatment both for HIV and Hbs Ag?

Resource Management and Prioritization

All along we have had long debates about the various aspects of ethical guidelines. The common meeting point in all these arguments is that the surgical procedures should do good to the patients.

A new dimension to ethical thinking has to be introduced at least now. That is resource management and prioritization in ethical decisions.

During 1975, I visited one of the largest Burn Centres in New Delhi. During the rounds one of the senior consultants said that it is their policy to make the severely burnt patients as comfortable as possible by heavy doses of sedatives while precious intravenous fluids, blood and antibiotics are withheld from such patients, knowing fully well that they are not likely to survive, even if they had been administered with those drugs.

This ought to be the policy in a country like ours where medical budget is very small and the same needs to be used judiciously. In war and natural calamities should we try to save the savable patients or try to help a dying patient at the cost of a savable patient?

Economic status of the patient and his family should be a very important yardstick while offering expensive treatment.

Same is true of transplant patients. We are morally not justified in doing kidney transplant in our country at an enormous cost to the patient and his family.

This should be the guiding principle in all cases and major oncological surgery for advanced malignancy. I do not think that there is any place for supra radical surgeries of yester years now!

Evidence Based Surgery

Most often we follow the routine medical practice. In fact, we are rather worried to introduce a new concept into the management of a patient, feeling safe under the umbrella of older techniques with

which we are familiar. 'Evidence based Surgery' is a new concept that makes us more responsible to our patients. Are we ready for it?

In evidence based medicine, the physician converts the patient's problem into a number of questions, searches answers for these questions in the vast pool of medical literature, understands and analyses what is good for the patient and then implements the correct mode of treatment.

Requirements for application of evidence based medicine are, in house modern library facility like Computers, Internet, CD-ROMs etc., time at their disposal, willingness to work along with young residents and a proper aptitude on behalf of the senior consultants to accept the newer methodology in the management of a case.

That is ideal, no doubt. Let me hasten to say that we are a long distance from this ideal state. Imagine our junior colleagues sitting in front of a computer and browsing Internet for information on every case they come across! To practice evidence based surgery one may have to spend nearly 12-14 hours of study daily. An investigation done by the Oxford University Study shows that doctors hardly give 30 to 45 minutes per week for study!

Many of our surgical units in private practice are single man units. Many of us do not have time for anything other than patient care. Most of the surgeons in rural India have the burden of tackling all types of surgery, including conducting normal deliveries; in many arts that he practices he would not have been even trained! Can this be practiced at least in larger institutions – in Medical Colleges to start with?

Medical knowledge in India is highly authoritarian and most of the Professors, I dare say, will resent being exposed of their limited knowledge by their junior residents, should they apply evidence based medical practice.

Evidence based surgical practice is truly ethical and it integrates, medical education with clinical practice. It is the need of the day. Let us start moving in this direction. Though not computers and internet, let our colleagues atleast attend the medical conferences and CME programmes to update themselves. Recertification of a doctor / surgeon has to be mandatory in the interest of the patient whom we have owed to protect.

Whither Medicine!

Medicine is rapidly being engulfed by two unsuspecting evils (?) of the present day world. First is the free market economy and the second is the science.

Health care like education cannot be governed by the neo-financial policy guided by the developed countries and World Bank. With majority of Indian population being poor, to state that there are 'no more free lunches' is the hypocrisy of the highest order. The State has to come to the citizens' rescue. Though right to health is not one of the fundamental rights, but out of necessity people have to rely on Government's generosity.

Will science capture medicine on a future date? In that event medicine will become increasingly cold, uncaring and inhumane. Will the physicians give up courage, common sense and compassion to combat disease and surrender meekly to gadgets produced by the awesome power of science and technology? Will the physician of future feel embarrassed to hold the hand of a dying man?

Imagine the prospect where a physician is an appendage to a machine, computer or robot that ministers to the sick.

'Science can be both powerful and beautiful, yet it is cold and impersonal; machines 'may work wonders but they are incapable of care and compassion'. Each human being is an individual by himself having distinct feelings, emotions dreams, desires etc. they cannot be treated with single yardstick. Here lies the art of medicine.

"The future of the man and medicine rests with MAN". "He should chanalise the power and beauty of the science for the benefit of the mankind, subjecting it to ethical and moral constraints. If he does so, man and medicine in the distant future may usher in a brave new world. If not, mankind will once again be plunged into 'a new Dark Age made more sinister and perhaps more protracted by the lights of perverted science.'

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17

Ethical Principles in Biomedical Research on Human Subjects or Animals

Dr. D. K. Srinivas

National and international codes have been formulated to regulate research using human subjects and animals. Any one conducting research or experimentation should bear in mind the ethical principles. Although human and animal experiments were going on, the interest and concern over the use of either human beings or animals began relatively recently. The use of prisoners of war and those held in concentration camps by Nazi physicians during World War II (1939-45) and the trail of Nazi physicians triggered the first international declaration, popularly known as *Nuremberg Code* of 1947. It was only in 1964, that the next important step took place. The International Organisation of Medical Sciences (CIOMS) and the World Medical Association formulated the *Declaration of Helsinki*. It has been reviewed from time to time and modified by the World Medical Assembly. It differentiated between therapeutic and non-therapeutic research. In 1966, the International Covenant on Civil and Political Rights specially stated, among other things, "no one shall be subjected to without his consent to medical or scientific treatment".

In 1982, the World Health Organisation and CIOMS, proposed international guidelines, and in 1993, the CIOMS issued International Ethical Guidelines for Biomedical Research involving Human Subjects. Another significant development was identification and enunciation of basic principles underlying conduct of biomedical

and behavioural research involving human subjects in the Belmont Report of 1976.[1]

Over the years various countries have also drawn 'national codes' based on international codes and ethical principles. Our country can take pride for preparing detailed guidelines much before many developed and developing counties. Indian Council of Medical Research brought out a document in 1980 titled "Policy statement on ethical considerations involved in research on human beings". This document was updated in view of recent developments like human genome analysis, organ transplantation, Assisted Reproductive Technologies. The revised guidelines were published in September 2000 as "Ethical Guidelines for Biomedical Research on Human subjects".[2] It is also known as ICMR code and consist of

I) Statement of General Principles on Research and

ii) Statement of Specific Principles on Research

In the present paper, the above mentioned general principles will be described briefly. The relevant international code corresponding to these ICMR guidelines will be mentioned.

General Principles

The ICMR guidelines list 12 general principles[1]. These incorporate the cardinal principles enunciated in Belmont report[2]. Many of the principles overlap. Distinction helps in better understanding of principles for making decision during ethical dilemma. The chronological presentation does not convey any priority or order of importance.

1. Principle of Essentiality

Only if it is considered absolutely essential, and after considering other alternatives, in the light of existing knowledge, if the research is likely to advance knowledge and benefit other humans or the

community, human subjects should be used for research or experimentation. Proposals involving human subjects must be considered carefully by an ethics committee, which consists of responsible body of persons external to the proposed research. Conflict arises in two situations in teaching institutions. First is the blurred boundary between accepted therapeutic clinical practice and research. Second, studies undertaken by postgraduate students in partial fulfillment of their course. However, there need not be any cause for doubt whether or not the above two situations require review by Institutional Ethics Committee or Institutional Review Board (IRB). The general rule to be followed is, if there is any element of research in an activity, that activity should undergo review by the ethics committee or IRB. For further reading on distinction between research and practice, see Belmont report[2].

The above principle applies for research using animals also.

2. Principle of Voluntariness and Informed consent process

This is one of the three cardinal universal principles enunciated in Belmont report and international codes too. It incorporates respect for persons, and acknowledges autonomy. Respect for persons demands that people enter to research voluntarily and with adequate information. To respect autonomy is to give weight to autonomous person's considered opinions and choices. To show lack of respect for an autonomous person is to deny an individual the freedom to act on his judgments and to withhold information.

Human subjects to be included for research are fully informed of the research, its purpose, impact and risks on them and others. The research subjects retain the right to withdraw from further participation at any time without prejudice or any legal obligation subject to only minimal restitutive obligations of any advance consideration received and outstanding. The subjects should be continually informed. Thus it is a process, not a one-time event. The

nature and form of consent (whether written or oral) and evidentiary requirements to prove such consent was taken shall depend on the degree of seriousness, invasiveness or potential risk of the research.

The principle of autonomy also protects those with diminished autonomy. If it is considered essential to conduct research or experiment on persons who are incompetent to give consent, they need to be protected. Such consent to "volunteer" shall be obtained from persons who are empowered to act on their behalf (see also under principle 4.)

3. Principles of Beneficence

This is another cardinal principle. Beneficence does not mean charity or acts of kindness as often understood. Here it should be taken as two complementary expressions: (i) do not do harm (ii) maximize possible benefits and minimize possible harms. Subjects included for research are treated in an ethical manner not only by respecting their decisions and protecting them from harm but also by making efforts to secure their well being.

4. Principle of precaution and risk minimization

This is continuation and further elaboration of second part of the principle of beneficence. *Non-beneficence* (do no harm) holds a central position and guards against avoidable harm to research subjects. One should ensure that research subject and those affected by it are put to minimal risk and suffer from no irreversible adverse effects. Due care should be taken at all stages of research by the investigators. The research project should include mechanism for compensation through insurance or other appropriate measures to cover all foreseeable and unforeseeable risks including after care not only during but even after the research or experiment.

One should be cautious in selection of following special groups, children, pregnant women, and vulnerable groups.

a. *Children:* Research or trials on children should be avoided as far as possible. If for a new drug, it should be done after phase III clinical trial in adults. A good indication to judge whether or not an experiment on a child is ethical is for the investigator to ask oneself the question "would I do this to my own child?" Voluntary informed consent must be obtained from the parents or guardian of the child before carrying out the research. Refusal of a child to participate must be respected.

b. *Pregnant and nursing mothers:* As a general rule pregnant or nursing mothers should not be subjects of research or experimentation unless it is expected to advance the health of pregnant or nursing women or fetuses, for example, to test efficacy and safety of a drug to reduce risk of perinatal transmission of HIV infection from mother to child. Remember that there are two persons involved. Research, which might affect breast fed baby, also should be avoided.

c. *Mentally challenged and mentally differently able persons:* Research on this group poses difficult ethical questions. The general rule to follow is if such subjects have intervals when they have possession of their faculties, then consent should be taken during such period before including them for proposed research, otherwise consent will have to be taken from parents or legal guardians.

d. *Subordinate persons:* Inclusion of students, employees, prisoners, etc., must be given careful consideration for they may not be able to say 'no'. Similarly economically or socially disadvantaged should not be used to benefit those who are better off than them.

5. Principle of non-exploitation

This principle rests on the fact that not every human being is capable of self-determination. For instance, foetuses or young children on the one hand, individuals who have lost wholly or partly their capacity

due to illness, mental disability or circumstances (prisoners) should not be exploited on the other hand. They need protection. The extent of protection needed should depend upon the risk of harm and likelihood of benefit. The judgment that any individual lacks autonomy should be periodically reevaluated.

Another way of exploitation may lie in the area of giving remuneration or compensation for participation. The payments should not be too large to be an inducement. Similarly free medical care should not become an independent.

Academic institutions receiving research grants from industries or commercial companies must ensure that there is no conflict of interest.

6. Principle of privacy and confidentiality

The identity and records of human subjects of research are kept confidential as far as possible. Disclosure should be only after specific consent in writing of the human subject concerned, after ensuring that it will not cause any stigma, discrimination, or hardship. The purpose for disclosure should be only for valid scientific, legal or therapeutic reasons.

7. Principles of Professional competence

Research should be conducted by scientifically and qualified and competent persons. The investigators should be aware of ethical considerations and exercise high degree of skill through all stages of study.

8. Principles of accountability and transparency

Research should be conducted in fair, honest, impartial and transparent manner of each aspect of the research. Full and complete records of the research should be retained for a reasonable period for post-research monitoring and for scrutiny by legal or administrative authority if necessary.

9. Principles of maximization of the public interest and of distributive justice.

The research and its subsequent application must benefit every one not just those who are socially better off but also the least advantaged, particularly the research subjects themselves. Weaker members of communities should not bear disproportionate burden. The class of persons bearing the burden should receive an appropriate benefit and the class primarily intended to benefit should bear a fair proposition of risks and burdens of study. The conflict arises between best of care and best of available care.

10. Principles of Public Domain

The results of research should be generally made known through scientific and other publications subject to such rights as are available to the researcher.

11. Principles of Institutional Arrangements

It will be the duty of all and the institutions connected with the research to comply with the procedures. Appropriate steps to be taken ensure that reports, materials and data connected with research are duly preserved and archived.

12. Principles of Totality of Responsibility

The professional and moral responsibility for the observance of all principles, guidelines etc., lies not only those directly involved with the research but also on institution or institutions where research is conducted, on those who sponsors or fund or use the benefits. The effect of research should be duly monitored and remedial actions taken after review.

13. Principles of Compliance

It is similar to the above mentioned principle. It entails that it is the duty of all those connected with research on human subjects to ensure these guidelines are followed in letter and spirit.

Ethical Review Committee

It is essential that all proposals on biomedical research involving human subjects should be cleared by an appropriately constituted Institutional Ethics Committee (IEC), also referred to as Institutional Review Board (IRB). This is to safeguard the welfare and the rights of those subjects included in research. The ethics committees are entrusted not only with the initial review of the proposed research protocols prior to initiation of the projects but also have a continuing responsibility of regular monitoring for the compliance of ethical issues of the approved projects till they are completed.

Composition of IRE/IRB: It should be multidisciplinary in composition. Independence and competence are the two hallmarks of an IEC. The number of persons in an ethical committee be about 9-11 members. It is generally accepted that a minimum of five persons is required to compose a quorum. The chairperson of the Committee should preferably be from outside the institution and not head of the same institution to maintain the independence of the Committee.

Laboratory Animal Ethics

Experiments conducted on animals should be rational, should not cause undue pain or suffering to the animals and only minimum number should be used. The scientists working with laboratory animals must have ethical considerations for animals they are dealing with. It is important that such considerations are taken care at individual, institutional and national level.

The scientists and technicians handling animals should possess adequate skill to perform the experiment. Animals should be maintained under standard conditions. All invasive experiments should be conducted with care and under proper anaesthesia and on termination of experiment, the animal should be humanely sacrificed under anaesthesia. Whenever possible, in-vitro systems can be used to reduce/replace animals in experimentation.

For more details one may refer to INSA guidelines [3], Guidelines of Committee for the Purpose of Control and Supervision of Experiments on Animals [CPCSEA] [4] and GCP guidelines [5].

Conclusion

These principles or codes are guidelines. Some are general, others specific. Their aim is to help investigators or reviewers of research in their work. To quote from Belmont report, "these guidelines are inadequate to cover complex situations; at times they come into conflict. They are frequently difficult to interpret or apply and sometimes may not be able to resolve beyond dispute particular ethical problem". They may provide analytical framework that will guide the resolution of ethical problems arising from research involving human subjects or animals.

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(The author acknowledges the Indian Council of Medical Research, New Delhi as guidelines have been used from their publication mentioned under references, (Ethical Guidelines for Biomedical Research on Human Subjects, ICMR, New Delhi, 2007.)

Section III

Attributes of Teacher

"A teacher can never truly teach, unless he is still learning."

Rabindranath Tagore

"A good teacher is like a candle,
it consumes itself to light the way for others."

S. Radhakrisnan

18

Attributes of a Good Teacher

K.Chandrasekharan Nair

In ancient India teacher was known as Guru. The term guru has become very fashionable in modern times and which carries the tag of an expert. The word 'Guru' is derived from the Sanskrit language and has a deep spiritual meaning. Its two syllables *Gu* and *Ru* stand for the following:

Gukaaro Gunaatheetham, Rukaro Rupavarjitah
Gukaaro Andhakarascha, Rukaro Thannivarah

Gu stands for gunatheetha (one who transcends the three gunas-satwa, rajas and tamas) and Ru for rupavarjitah(one who is formless). Also Gu means darkness; the darkness of ignorance. Ru means to remove. Therefore Guru is one who dispels the darkness of ignorance. In other words Guru represents the radiance of spiritual knowledge that dispels the spiritual ignorance.

Teacher is also known as Aacharya. Aacharya is the one who practices and teaches the same to others. Aacharya is the one who demonstrates through practice. In the modern context acharya is a role model who does serious thinking and research.

There are a few differences in the perceptions of modern and ancient teachers: The modern teacher considers teaching as a profession and teaches only for a specific period of time whereas the ancient teacher had no time limit. While the modern teacher teaches through words, the ancient counterpart taught through words and beyond words. Modern teacher has no concern for students' personal life on the contrary the ancient teacher looked after the student in every facet of life. Modern teaching is compartmentalized whereas ancient teaching encompassed everything.

The scriptures tell that all knowledge is within us. But there is a thin film of ignorance covering the knowledge. The teacher does not teach, but removes the thin layer and brings out the knowledge. Perhaps this is what is meant by guidance from the teacher. Good teachers are excellent facilitators who make the students learn. Teachers do not teach but make the student learn by unveiling the knowledge within. Learning is by students.

The process of teaching and learning was treated as a sacred action and not a commercial activity. Knowledge stood head and shoulders above every other kind of wealth. Scholars were respected much more than those who were rich in money and power.

Roles of a good teacher

1. Teachers are to be good

Good teachers are really passionate about teaching and they strive hard to improve their methods. Their focus is always on the student and helps the student who really wants to succeed. Good teacher should be sincere and sincerity cannot be faked. The achievements of the student should make the teacher proud even if it is not recognized by the student. Teacher should be broadminded to acknowledge the competence of the student. At no point of time, jealousy should creep into the mind of the teacher on meeting with the excellence of the student. An excellent student is stimulated to explore more by a mediocre teacher than an excellent teacher who would provide ready answers. In fact teachers are to be good otherwise they cease to be teachers.

2. Teacher should be knowledgeable

Teacher should know what the students are supposed to learn at the end of the course. For that there is no doubt, the teacher should be thorough with the subject he/she teaches. Teachers are tempted to overload the student with subject (syllabus). Students may find it hard

to assimilate. So teacher should priortise on the essentials that student should learn. The essentials are to be repeated many times during the instructional period. Training or repeated performance makes the student proficient and proficiency becomes a habit. This habit changes the attitude of the student. Good teachers can make lasting impressions on their students not by the volume of knowledge the teacher possesses, but by the number of essentials he could transcend thereby creating a great attitudinal transformation.

3. Good teachers are creative

Creative teachers do not teach but they make their students learn. For them the normal parameters will not serve the purpose. The lessons they intend to teach will be presented in different ways that the student will not know how they learned them. Creative teachers require more academic freedom and they take risks in their methods. It is termed as a risk because every time success cannot be expected when a new methodology is implemented. If there is no chance of failure, then success is meaningless. Same subject matter cannot be presented to the students in the same way year after year. Old techniques make a creative teacher threatened and he thinks of fresh ways of making the student learn.

The story how fish stayed fresh when threatened by sharks is one of the finest examples: The Japanese have always loved fresh fish but the waters close to Japan did not have much fish. To feed the population the fishing boats got bigger and went farther than ever. The farther the fishermen went, the longer it took them to bring in the fish. If the return trip took more than a few days, the fish were not fresh and the Japanese did not like the taste. To solve this problem fishing companies installed freezers on their boats. Unfortunately the consumers could taste the difference between fresh and frozen fish. So fishing companies installed fish tanks in the ship. After a little thrashing around, they stopped moving. They were dull, tired but

live. Japanese could still taste the difference. Finally they hit upon an idea which could make the fish agile. A small shark was added to each tank. The shark did eat a few fish but the rest of the fish were challenged and kept on the move. Japanese consumer got the freshest possible fish. The creative teacher feels challenged by old techniques making him seek new ideas and projects as fresh as ever.

4. Challenging the student

Good teachers try to keep their students off balance, forcing them to step into challenges that they are not at all sure they can handle. Good teachers push and challenge their students, jerking them into places where they feel uncomfortable, where they don't know enough, where they cannot slide by on past knowledge or techniques. Good teachers, as soon as their students have mastered something, push their best students well past the edge of their comfort zone, striving to make them uncomfortable, to challenge their confidence so they can earn a new confidence. Challenging situations make the student explore into newer areas culminating in great success. The student feels that the teacher is with him and his confidence level increases. The teacher feels proud when the student achieves but when he fails, the teacher encourages him and gives a nice lesson on how to face failure.

5. The role model

Role models are people who have qualities we would like to have and are in positions we would like to reach. Role models have been shown as a way to inculcate professional values and attitudes in students and in young medical professionals. The teacher as a clinician should model or exemplify what should be learned. Students learn not just from what their teachers say but from what they do in their clinical practice and the knowledge, skills and attitudes they exhibit. Teachers serve as role models not only when they teach students while they perform their duties as doctors, but also when they fulfill their role as

teachers in the classroom, whether it is in the lecture theatre or the small discussion or tutorial group. The good teacher who is also a doctor can describe to a class of students, his approach to the clinical problem, discuss in a way that captures the importance of the subject and explain the choices available. The teacher has the unique opportunity to share some of the magic of the subject with the students.

Students and young doctors consider enthusiasm, compassion, openness, integrity, and good relationships with patients as attributes they seek in their role models. They are also drawn to senior professionals who embody responsibility and status. When some senior doctors show poor attitudes and unethical behaviour, it causes confusion, distress and anger in young doctors and students under their supervision. By no means all doctors with teaching responsibilities have the attributes that students and young doctors seek in their role models. However it should be realized that role modeling is not the only method to impart professional values and attitudes.

6. The information provider

A traditional responsibility of the teacher is to pass on to students the information, knowledge and understanding in a topic appropriate at the stage of their studies. This leads to the traditional role of the teacher as one of provider of information generally in the lecture context. The lecture remains as one of the most widely used instructional methods. It can be a cost-effective method of providing new information not found in standard texts, of relating the information to the curriculum and context of medical practice and of providing the lecturer's personal overview or structure of the field of knowledge for the student.

The clinical teacher passes information in the clinical setting, either in the hospital or in the community and the information is directly

relevant to the practice of medicine. Good clinical teachers can share with the student their thoughts as a ***reflective practitioner***, helping to illuminate the process of clinical decision making (see chapter 39).

7. The facilitator

Facilitator helps to bring about an outcome (as learning, productivity, or communication) by providing indirect or unobtrusive assistance, guidance or supervision. Presently learning has become more student centered. Hence the fundamental shift to the role of facilitator. A good teacher will be a good facilitator. No longer is the teacher seen predominantly as a dispenser of information or walking tape recorder, but rather as a facilitator or manager of the students' learning. The introduction of problem-based learning with a consequent fundamental change in the student-teacher relationship has highlighted this change in the role of the teacher from one of information provider to one of facilitator. However teacher should not feel that the facilitator role is very passive. Rather it is an active role. The student might feel that the teacher simply observes and the effort is put in by him. The teacher starts teaching a new subject and gives some problem to solve. Some information is given by the teacher as an introduction and later provides a list of resources where the student can find the solution to the problem. Teacher allows time but the job is time bound. The student is emboldened by this process but he may not be aware that the teacher had to go through many books and journals to provide the list of resources. That is the reason, it was stated that the facilitators job not passive but active.

8. The mentor

Homer described ***mentor*** as "wise and trusted counselor". In modern times, the concept of mentoring has found application in virtually every forum of learning. In academics, ***mentor*** is often used synonymously with ***faculty adviser***. A fundamental difference between mentoring and advising is more than advising; mentoring is

a personal, as well as, professional relationship. As mentor is someone who takes special interest in helping another person develop into a successful professional. The role of mentor is a further role for the teacher. Mentorship is less about reviewing the students' performance in a subject or an examination and more about a wider view of issues relating to the personality of student both curricular and extra curricular. In short, career development based on value system is possible only through mentoring.

9. Teacher as assessor of learning outcome

Assessment of the student's competence is one of the most important asks facing the teacher. Through conventional or non-conventional methods, a teacher assesses students on their achievements about which the teacher clearly states at the beginning of the course. Teacher should organize assessment into frequent, ongoing, contextual and developmental activity. Teacher should use multiple methods and a variety of environment and contexts (class room, bedside, laboratory, community etc.,) to capture different aspects of student performance i.e., knowledge, attitude and skills (Epstein 2007). Teacher should also give positive non-judgmental feed back immediately or as early as possible and frequently too (usually known as formative assessment).

At the end of a term, the student is evaluated by a formal process of examination which is known as summative evaluation. Teacher should gain expertise on the different components of evaluation process. Setting a question either for a written examination or for a viva, involves a meticulous process in which all the teachers may not be good even though they are good in making the students learn. It is better to learn the evaluation process through training programmes. All good teachers should try to be good evaluators or assessors of students learning (See Chapter on How to be a Good Examiner).

Teachers have responsibility not only to plan and implement

educational programmes and to assess the students' learning, but also to evaluate the course and curriculum delivered. Monitoring and evaluating the effectiveness of the teaching of courses and curricula is now recognised as an integral part of the educational process.

While assessing the teaching process and curriculum, teachers should subject themselves for monitoring of their own performance also. Quality teaching is closely related to personal development which is possible only by a self assessment process.

10. The planner

A teacher should be able to contribute towards planning of the curriculum. For this purpose teacher should get himself trained on the basics of medical education technology. He should also be aware of the health needs of the country and the health policy adopted by the Government. With an improved awareness of these components, a teacher will be able to contribute towards the planning process. Universities and institutions usually have bodies containing experts and teachers for this purpose. Curriculum planning presents a significant challenge for the teacher and both time and expertise are required if the job has to be undertaken properly. In an institutional and departmental level, the teacher should plan the course without losing its relevance and at the same keenly verifying for its capability to bring in observable and measurable changes in the students.

11. Be an author or resource developer

There is an increased need for learning resource materials in the modern educational system. New technologies have greatly expanded the formats of learning materials which are easily accessible to the students. Learning materials make the introduction to a subject much easier which otherwise would be tough. The student finds the study interesting because of greater understanding and he feels more responsibility. The role of the teacher as resource creator offers exciting possibilities. Teacher should be able to produce books

on his subject of teaching or produce notes (study guides) adapted from standard text books which are already available. Study guides suitably prepared in electronic or print form can serve as the students' personal tutor, available 24 hours a day and assist the students with their learning. Study guides tell the student what they should learn - the expected learning outcomes for the course, how they might acquire the competencies necessary - the learning opportunities available, and whether they have learned it - the students assessing their own competence.

12. Good communicator and presenter

A teacher of the health profession should primarily be a good doctor capable of identifying patients' problems accurately. Doctors with good communication skills have greater job satisfaction and less work stress. Their patients adjust better psychologically and are more satisfied with their care. The basic skills involve speaking in simple fashion and listening greatly. These skills will make a teacher communicate well with the students (See Chapter on Communication Skills). This will improve the teacher student relationship and students will feel that the teacher is approachable.

Teacher should be a good presenter too. To be a good presenter, basics of public speaking must be learned either by observation, reading or by training. Present day teacher should acquire skills such as making a power point presentation, photography, operational knowledge of computers, LCD projectors, over head projectors, preparation of word documents, photocopying and the use of white and black boards. Internet has become an essential tool for the teacher in accessing and updating knowledge.

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19

How to be a Good Examiner

D.K. Srinivas

> *"Teaching without testing is like cooking without tasting"*
> *(Ian Lang, Scottish Secretary)*

Just like the myth that 'good medical teachers are born', it is often believed that all of us- teachers- automatically become good examiners too! Not many think so. Here are some quotes on examiners and examinations:

> *" When I would willingly have displayed my knowledge, they sought to expose my ignorance"*
>
> Winston.Churchill
>
> *"Examinations are formidable even to the best prepared, for, the greatest fool may ask more than the wisest man can answer"*
> (C. Charles Colton 1780-18321)
>
> *"Students work to pass Not to know*
> *They do pass and they don't know"*
>
> (Thomas Huxley)
>
> *"A lot of harm has been done through examination system because of human friality. The examiner as a person needs to be a human being first"*
>
> (Mehta, L.A. 2002)

Why such perceptions persist even today? Why that examination is considered a necessary evil or a barrier rather than a tool to encourage growth of students. Infact, educators consider that examinations are one of the key motivators for learning and have a direct as well as

indirect influence on the way student learns. Are there ways to improve this situation, particularly, by us teachers? One should seriously introspect.

In this chapter, I would like to make briefly a situation analysis, mainly based on data gathered through an inquiry driven approach from students and examinations. Then, I propose what attributes an examiner should posses to be a good and effective examiner.

Situation Analysis

I shall cite three situations.

Situation I

Recently, after announcement of examination results by a University there was a long drawn agitation by a section of students. Among other things the students alleged that:

> Some of the questions in the paper were 'out of syllabus' and
>
> Examiners were "in a hurry, just took an average six minutes to correct the answer papers as they were greedy to collect more remuneration."

The students demanded that photocopies of answer scripts be given to them for verification.

The allegation about *'greed'* and *'hurry'* and the demand for answer scripts points that students are loosing faith in teachers. Sad indeed!

Situation II

Let us see the information gathered from a group of interns and first year postgraduate students on their opinion regarding clinical and oral examination of final MBBS examination that they had appeared. The group mentioned that: in clinical examination, theoretical rather than clinical knowledge was tested, very little importance was given for testing clinical procedural skills, examiners did not observe them

while they were examining long case and communication skills rarely if ever was tested.

Situation III

We did an exit interview of a batch of students after a University theory examination. We asked students to give their views on the questions. Against each question appearing in the question paper the students were to respond about: clarity of question, adequacy of time and (the type of) question that they like most.

According to them the question paper had predominance of long essay questions, majority of questions were testing recall of knowledge only, whereas, testing of understanding or application of knowledge was limited, and some questions were vague.. The type of questions they like most should: "involve thinking", "be on common problems / diseases", "relevant to present situation", "close to clinical situation", "require interpretation of matter studied and interpretation of health status", "help (to work) as a doctor in future life" and be able to "test many problems in a compact way".

Lessons learnt

The student responses were indeed revealing and remarkably useful. They provide many clues to examiners. What do we learn from the above? Firstly, that it is important to have a clear description of course objectives and detailed syllabus. Secondly, paper setter should carefully study the objectives and syllabus of the course and set appropriate questions. Thirdly, examiners should construct questions which test 'higher levels of thinking skills (HOTS)', and should choose words/phrases carefully and clearly that convey to the students what the examiners want to test (applicable to written as well oral examination).

Attributes of an examiner

From the data gathered from students, we can describe what attributes

an examiner should posses and what one can do to be a good and effective examiner. In my opinion to be an examiner one should have or acquire three qualities 'A S K' *viz* right Attitude, required Skill and reasonable Knowledge about student assessment. Let me elaborate each of the quality.

Attitude

First, we teachers should recognize responsibility bestowed upon us by the society, in good faith, that as examiners we have an obligation to find out and certify whether the medical students at the end of their education and training are fit to practice medicine safely. This calls for great deal of commitment and effort. Pappaworth (1975) said 'Examiners should never allow difficulties to be made an excuse for diminishing either the conscientiousness or thoroughness with which they undertake privileged task'[1]. Second, is to realize that teaching skills and examination skills are different. A 'good' teacher may not necessarily be a good examiner! Cox and Evan opine that teaches are likely to overestimate their consistency in phrasing of questions and awarding marks in xamination[2]. Therefore, we should be ready to learn our deficiencies in framing or phrasing of questions that test different abilities and learning outcome from introspection as well as feedback from colleagues and students. This can be done by review of questions set by us or asked in clinical or viva examinations. Review can indicate whether the questions we asked actually test what we intended to test. It can also be done by capturing interchange between examiners and student by video recording and playing back. It might provide insight *'To see ourselves as others see us'* [2]. Third, examination skills are not innate but can be learned. Training in examining improves validity and reliability of student assessment[3]. To ensure that examiners are of high quality, Royal College of General Practitioners requires potential examiners for MRCGP examination to undergo training. (See Box 1) Examiners are first accepted for a probation period of two years and their performance is

monitored. In India too, we should be willing to undergo training and be supervised of our performance. Fourth is to have prior discussion on criteria, purpose and on a set of 'dos and don'ts (see Table 1). Finally, as examiners we must be responsive to recent trends in educational measurements as we are to advances in medical science. New methods of proven value [3] (see Norcini and Burch 2007) must either replace or be incorporated into traditional approaches.

Skills

To be an examiner requires considerable skills. Skills can be learnt through training and feedback

Let us look at some of the essential skills required:

1. Effective interpersonal skills and the ability to act as a member of a small team
2. Phrasing of questions both for written examination as well as viva-voce examination
3. Construction of questions particularly for written examinations that test for cognitive abilities such as understanding of subject, logical analysis, reasoning, application of knowledge, problem solving, preparation of case vignettes etc. If questions are not properly constructed or framed, it will result in inconsistent scoring. We are familiar with this problem.

Here are few examples of poorly framed questions that have appeared in University examinations of M.B.B.S and B.D.S. course.

(Long) Essay Question (marks per question: 12-16)	*Subject*
Write in detail about edema	Pathology
Section 320 of I.P.C*	Forensic Medicine
Describe Renal function tests	Medicine
Describe the role of Salicylates in the last 100 years	Pharmacology
Write an essay on Pharmacodynamics in Prosthodontics	Prosthodontics
Short Essay Questions (marks per question:5- 6)	
Gout*	Medicine
Anemia*	
Diabetes mellitus*	
Salicylates	Pharmacology
Compare and contract urinary tract infections in men and women (sic)	Surgery
National Health Programmes	Community Dentistry
Short Answer Questions (2-3 marks each per question)	
Rheumatic fever	Medicine
IUD	Obstetrics &Gyn
DNA	Biochemistry
List a few haemo parasites. Can you draw them?	Community Medicine
P.U.S	Oral Medicine & Radiology
Dentist Act	Community Dentistry
Nerve Injuries	Maxillo-facial surgery

The length and scope of answer in short essay and short answer questions are limited. Notice the questions highlighted with * do not have any prefix or suffix. Neither, students attempting these questions, nor examiners valuing these questions would have any idea of what learning objectives the paper setter wanted to test from these questions. There was confusion about the question 'IUD'

whether it was 'Intra Uterine Devise' or 'Intra Uterine Death'! Both students as well teachers were unable to decipher the question 'P.U.S.' Time management for students would also difficult. If the questions are not properly framed. Validity of the examination will be lost. Therefore there is need for us examiners to learn skills of constructing questions. By practice, review and discussion with peers one can improve one's skills in construction of questions.

Knowledge

What knowledge should an examiner possess? Should the examiner be an expert in education? No, not necessary, but should be familiar with:

***Technical aspects of student assessment*:**

Careful planning and selection of examination methods and test instruments (See Box- 2)

Characteristics of a good test instrument:

Validity, reliability and objectivity and methods to improve them

Mechanics of question paper setting:

It consists of designing of question paper, preparation of 'blue print' or 'specification table' of question paper, refining questions, editing and review of question paper[4, 5]. Let me briefly describe the mechanics of question paper setting

Designing of Question paper

The factors to be taken into consideration are:

a) Weightage to be given to different chapters/topics.

b) Weightage for different objectives.

c) Forms of questions e.g. essay type, short answer and multiple choice (MCQ).

d) Guidelines regarding use of options (choice) and difficulty level.

Blue print of Question Paper

Blue print of a question paper is a three dimensional chart specifying follwing:

a) Objectives tested by the question(s)*

b) Chapter and topics on which questions are framed

c) Form of question

A format of blue print is given in Table 2.

Refining questions

Refining questions consist of:

a) Review whether the questions prepared test important learning outcomes intended by you (Validity)

b) Whether the:

- Directions to the candidate have been clearly stated, for example, approximate time and length of answer required, how to answer (in a separate sheet or darkening a circle with a black pen etc).
- Questions have been framed clearly including language used, spellings and punctuation.
- Marks allotted is appropriate to the difficulty or type of question

Editing and Review of question paper

A checklist to edit and review is given below:

- Has the question paper covered the syllabus in a fair manner without giving undue emphasis to one chapter or the other?
- Are the weightage to various topics, different type of objectives and questions appropriate?

- If choice given, do the options have comparability in terms of objective, form and difficulty?
- Are the question clearly stated?
- Is there any excessive overlap between questions?
- Can the questions be satisfactorily answered in the time allotted?
- Does the question paper avoid repetition of questions set in the previous examination?

Validation of Questions

Pre-validation and post-validation of questions should also be done. Pre-validation is a process of reviewing questions before they appear in an examination and post-validation is the process done after the questions have appeared in examination to find out difficulty level and discriminatory power of questions. (For details please see Ananthakrishnan 1995)[6]

New dimensions in assessment:

Emphasis has shifted from traditional end of course assessment to assessment as regular, frequent, on going activity at work place. Multiple methods to capture different aspects of performance (process and out comes) are being employed in US, Canada and the UK. Some of the popular methods are: Objective Structured Clinical Examination (OSCE), Standardized patients (SP), High fidelity Simulators, Mini Case Examination Exercise (miniCEX), Case-based Discussion (CbD), Direct Observation of Procedural Skills (DOPS), Structured Oral Examination and Multi Source Feedback (MSF) or 360^0. Check lists and rating scales for effective observation and feedback are used[3]. Observation can take place in different settings such as outpatient, inpatient and emergency. Patients presenting for the first time 'new patients', as well as those returning

for follow up may be utilized. These methods offer opportunities for observation and feedback on a variety of skills – focused history taking (interviewing skills), performing relevant physical examination, case presentation, technical skills, professional behaviour, problem formulation, (diagnosis), problem solving (therapy) and communication skills. Introduction of workplace assessment and structured feedback have increased student satisfaction with feedback[7] Surely, we should have knowledge, skills and readiness to use these methods and thereby improve student assessment.

Table 1: Dos & Don'ts in Oral Examination

Dos	**Don'ts**
Frame questions clearly	Do not flatly contradict answers
Be courteous to the candidate	Do not distract the candidate (examinee)
Try to find out what the candidate knows	Do not make examinee tense and uncomfortable
Be prepared to receive views to which you may not agree	Do not make fun at the expense of examinee
	Do not be annoyed at the long silence of the candidate
	Do not be impatient with the candidate
	Do not make insistent demands

Table 2: Format of a Blue print of a Question Paper

Chapter/ Topic	Type of Objectives / Questions												
	Recall				Comprehension (Understanding)				Application				Total No. of Questions
	LE	**SE**	**SA**	**O**	**LE**	**SE**	**SA**	**O**	**LE**	**SE**	**SA**	**O**	
Respiratory System													
Cardio Vascular System													
.....													
.....													
Total no. of questions													

LE= long essay, SE= short essay, SA= short answer, O = Objective type (MCQ)

Box 1

Two stage training given to potential examiners by Royal College of Practitioners for MRCGP examination

I stage

The potential examiners are required to:

(I) Answering a selection of recent written questions

(II) Marking of 20 selected examination papers.

Analysis is done of the results of potential examiners' marks on the written answers and how well the scores they have awarded to 20 papers compares with each other and that of original examiners. Based on this analysis the Examination Board's educational consultant advises.

II Stage

Further assessment of potential examiners is done. They are asked to undertake two tasks:

(I) simulated group work on setting and marking written questions

(II) Simulated oral (viva voce) examinations, acting in turn as examiners, candidate and observer.

Over a day potential examiners are thus observed undertaking interactive procedures that constitute the core acitivites relating to examination. Experienced examiners indepently judge them in terms of their approach and their skills in interpersonal communication and teamwork. The performance of each potential examiner is reviewed at a meeting chaired by an independent person.

When concern about a potential examiners from both parts of the procedure mentioned above he/she is not invited to join the panel of examiners.

New examiners are first accepted for a period of two years. After 18 months their performance is formally reviewed over a set of criteria derived from analysis of examiner's tasks. A poorly performing examiner might be counseled to take additional specific training or not to seek formal appointment.

Source: Wakeford, Southgate and Wass 1995 [8]

Box 2. Principles of Assessment

Aims of Assessment

- Selection of applicants
- Monitoring learning progress (Formative assessment)
- Certifying pass or fail or successful completion of course
- Meet public expectation of self regulation
- Provide direction and motivation for future learning
- Protect the society by upholding high professional standards

What to Assess

- Acquisition and application of knowledge and intellectual skills
- Habits of mind and behaviour
- Communication
- Clinical skills, and clinical reasoning and judgment in uncertain situations
- Teamwork
- Professionalism

How to Assess

- By use of structured, simplified and focused assessment of knowledge, skills and attitude
- Organize assessment as regular, frequent, ongoing activity
- Generate evidence through continuous appraisal and assessment
- Use multiple methods to capture different aspects of performance
- Include directly observed behaviors and real-life like situations
- Provide timely feedback and mentoring
- Use qualitative data to supplement quantitative data
- Document performance and make judgment based on evidence
- Use pass or fail criteria that reflect appropriate training levels
- Use authority effectively

Conclusion

No single assessment tool can capture the wide range of learning outcomes. Emphasis is on assessment of learning out-come and performance assessment. Direct observation of candidates, followed by a good system of feedback would certainly contribute towards mitigation of present maladies of testing trivia, lack of validity and fairness to the hard work put in by the students. There is a shift in the purpose of examination from an end of course activity to declare students 'pass' or 'fail' to that of a tool for facilitating learning and growth. These developments have implications on the role of examiners. Unless examiners are carefully selected, trained and monitored, examinations may become haphazard. Each one of us who wish to be an examiner must recognize that examination skills are not innate but can be learned and should have willingness to acquire them. To be an examiner requires great deal of commitment, effort, honesty and sincerity. Professional regulatory bodies like Medical Council, Dental Council etc., Universities, Directorates of Medical Education and professional Associations should take steps to introduce formal training of teachers on various facets of educational science including assessment of students.

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Section IV

Managerial Skills

Leadership

"If I have any merit, it is getting along with individuals, according to their ways and characteristics...

At times it involves suppressing your self. It is painful but necessary....

to be a leader you have to get to lead human beings with affection."

JRD Tata [1904-1993]

20

Leadership for Medical & Health Professionals

Dr. Sundararajan S. Gopalan

Introduction

Someone said that an effective leader is a person who can tell his (her) followers to jump from the top floor of a building in such a way that not only would they do it, but also love him (her) for it. This captures two dimensions of leadership, i.e., his/her ability to communicate directions and get the job done, and his/her popularity or likeability. But these are not all. A good leader must possess several other important qualities, which we will examine later on, in order to be able to make a real difference to the organization in question. In this context, the term "organization" is used in a broad sense; it could mean an institution such as a medical college or a hospital, or a project team or a cricket team or even a country (which is, in effect, nothing but a social, cultural and geopolitical organization). An age-old question about leadership has been whether it can be taught. In other words, is a good leader someone who is born with the necessary qualities, or can anybody learn leadership qualities and associated skills? We will probably not be able to settle this debate here, but suffice it to say that if we did not believe in the possibility of imparting some of the leadership skills, there would be no rationale

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** The statements, ideas, findings, interpretations and conclusions expressed in this chapter are entire those of the author and should not be attributed in any manner, to the World Bank, to its affiliated organizations or to members of its Board of Executive Directors or the countries they represent.*

for writing a chapter on leadership in this book. At the very least, one might observe that even those with inborn leadership qualities would need some training and application to refine the natural talents and put them to good use. Obviously such training does not always have to be formalized through a text-book or an academic teaching program; it could very well be informal training in the hands of a "guru" or a mentor – as might be the case for many a political leader.

This chapter seeks to deal with some generic aspects of leadership and examine how they might be relevant to a medical / health professional. The objective would be to provide to those of us in the health profession some pointers on what it takes to be a good leader, so as to help us apply these lessons in our professional roles. By definition the treatment of the subject would be fairly general, as it should be helpful to any medical or health professional regardless of whether (s)he is in clinical practice, teaching, research or administration.

A. Why is leadership necessary in medical / health profession?

1. There are two angles from which to look at the relevance of leadership qualities in the health sector. One is from the perspective of those who might occupy (or hope to occupy) leadership positions in their professional role, e.g., the Principal of a medical college, a Hospital Administrator, the Head of a clinical or non-clinical teaching unit, the Director of a Public Health Service, a Project Manager, or a Medical officer at a Primary Health Center; the list is endless. Additionally, some of us may even go on to become a Minister of Health in a State or at the Central level.

The other perspective is that of someone who might not actually occupy such positions, but would still benefit from some of the skills that constitute successful leadership; for example, good communication skills are an element of good leadership, but are useful for non-leaders as well. Regardless of what we end up doing

professionally, there will certainly be some instances where we would need to exercise good leadership qualities, even if just temporarily. For instance, we may be called upon to lead a group discussion in a conference or workshop and obtain consensus among the group members on an important issue.

Leadership qualities are essential for success in almost every profession, and ours is no exception. Still, this is apparently not a self-evident fact, for the subject is not even cursorily touched upon in the medical, dental, nursing, pharmacy or any other related curriculum. Of course, there are always other avenues for honing leadership skills within the medical or health fraternity. Apart from the leadership opportunity afforded by our professional position, which makes us learn the skills on the job, other opportunities do arise in the form of students' associations, hostel associations, sports clubs, debating societies, arts clubs and the like, even during our college days. Unfortunately, these opportunities are limited in number, and are usually made use of by a select few who probably already have the yearning to be leaders. Most students stay away from such opportunities due to various factors: shyness or lack of confidence, fear of reprisals by the authorities, pressures of study that compete with the time investment called for by such extra-curricular activities, and a perception that such activities are a waste of time. In some institutions the associations get overly politicized, even with the involvement of political parties, once again vitiating the atmosphere under which the students could develop their legitimate skills. After one graduates similar opportunities arise in the form of doctors' associations, nurses' union, etc. Once again, these tend to be seen as labor unions and most people shy away from seeking a position of leadership in such bodies for the same reasons mentioned afore. I was fortunate during my days as a medical student, to be able to take advantage of these opportunities. This is the reason why I readily accepted the offer to write a chapter on this subject for this book.

B. Different Leadership Styles

Though there are different ways of classifying leadership styles, the most commonly used classification is one that includes three styles depending on the level of consultation with, and involvement of, the followers (employees, team members and the like, according to the context). The three styles are: autocratic or dictatorial, democratic or participatory and delegative or "*laissez-faire*".*The autocratic leader consults the least, taking most decisions by himself / herself (at best taking advice from a small coterie of trusted advisers). The "*laissez-faire*" leader leaves pretty much everything to the followers (one might say that such a leader is not really "leading"). The democratic leader uses an appropriate mix of consultation and decisiveness; in other words, after genuinely listening to advice, (s)he takes informed decisions and delegates authority as necessary, to get things done.

Most effective leaders use a combination of all three styles, depending on the context; there may be times where extensive consultation may be neither feasible nor desirable. Crisis or emergency situations usually demand quick decision-making and strong leadership to coordinate everyone. In such situations, an overly participatory process would only delay matters. On the other hand, when taking decisions with long-term impact on the followers, extensive consultations are a must. Similar is the issue of delegation. Too much delegation or the "*laissez-faire*" attitude, without any direction being provided to the team, is certainly not the sign of a strong leader; but if one is a leader of leaders, e.g., the Chairman of a committee which itself consists of senior managers (leaders in their own right), not only is there a need to consult more but there is also a need to delegate both decision-making and implementation responsibilities.

**Laissez-faire is a French term meaning "allow to do". Thus an approach of giving everybody full freedom to do whatever they see fit, however they wish is called a laissez-faire attitude*

Another way to look at leadership styles is to look at the dichotomy between "task orientation" on the one hand and "people orientation" on the other. Task-oriented leaders focus more on the results to be achieved or goals to be reached by the team or the organization that they lead. People-oriented leaders attribute greater importance to the feelings and preferences of the people around them, primarily the team members. The former emphasizes "rational skills" of management, while latter concentrates on what might be called "emotional intelligence". Some might argue that the dichotomy itself is a false one, as task orientation is not necessarily the opposite of people orientation. After all, unless the team members are happy and well-motivated the results will not be achieved; conversely, if the team goals are achieved, the team members should also be happier. However, the dichotomy does manifest itself in those instances when a leader or manager wants to get things done "at all cost", even at the cost of an employee's health, or welfare, for instance. Similarly, when a leader foregoes the attainment of a deadline simply to avoid hurting a team member, the people-orientation trumps the task orientation. In any case, one would have to look at it as a continuum (rather than black and white), with varying combinations of the two approaches. This has led to the creation of four (rather than three) leadership styles: "Impoverished Management" / delegating (low concern for the task, low concern for the team); "Country Club Management" / supporting (low concern for the task, high concern for the team), "Authority Management" / directing (high concern for the task, low concern for the team); and "Team Management" / coaching (high concern for the task, and high concern for the team). It is easy to see some similarities between this classification and the previous one. Once again, an effective leader would have to use a combination of different styles according to the context. Even within the same team, specific individuals might need varying degrees of delegating, supporting, coaching or directing.

Finally, it is worth noting the distinction between "leading from the front", "leading from behind" and "leading by walking among equals". The first of these styles can be otherwise characterized as "leading by example"; the leader shows the way by his/her own performance, his/her own character, dedication to the team's goals and integrity. Clearly, this is an attractive proposition in many instances. However, it may not always be feasible. In the case of behavioral and character aspects, the leader must always lead by example; the Mahatma Gandhi was known to be a great exponent of "practicing what he preached". But when it comes to performing specific tasks, leading by example may be impossible; (s)he may not have the skills to demonstrate every aspect of the work to his/her team members. For example, a cricket team captain who is a specialist batsman obviously cannot lead by example when it comes to bowling; but when it comes to dedication, commitment and discipline in work ethics, the captain cannot expect the team to be any better than himself/herself. When the team has many accomplished individuals, especially those who possess specific areas of expertise that the team-leader personally does not have, "leading from behind" might well be the desired option. This style takes account of the comparative advantage that each team member brings to the table, including the leader, and also affords natural opportunities to recognize the contribution made by other team members; since the team leader does not always stand out in the front, (s)he is well-placed to give the limelight to other members of the team, which is a great way to motivate team members. The third style in this classification is one which seeks to lose the distinction between the leader and the led. All decisions are taken by consensus, the leader just provides gentle coordination and facilitation and allows everyone in the team to feel equally important in what may be called a "flat organizational structure".

Regardless of which style or combination of styles a leader employs,

one can never forget that at the end of the day, "the buck stops here", i.e., the leader is held responsible for whatever goes right or wrong. A good leader would never shirk such responsibility in the event of a failure, even when (s)he knows that the specific reasons for failure rests with a specific member of the team. While (s)he will certainly take steps to deal with the reasons internally, (s)he would protect the team member to the outside world (or even to the superiors). On the other hand, a good leader would spread the credit for success to all the team members. This seemingly contradictory approach of "taking the blame" upon oneself, while "giving the credit" to team members, is not a selfless act of nobility. It is merely a sign of a confident and secure leader, who understands the common rules of motivation, which are critical to getting things done; in other words, when praising a member of your team, do it openly and publicize it as much as you can; but when criticizing a member of your team, do it privately and one-on-one.

D. Qualities of a good leader

What makes a good leader? This depends on the circumstance. As noted already, certain circumstances would demand a dictatorial or prescriptive style of leadership, while others would warrant considerable consultation. Similarly, in certain contexts, one might need a leader who is a master in communication, and in other contexts, silent efficiency would be the order of the day. Thus perhaps the single most important quality of a good leader would be **flexibility or adaptability,** which allows him/her to change his style to suit the requirements.

The flip-side of flexibility is **firmness**. But there is a thin line between being rigid or inflexible and being firm on one's principles and goals to be achieved. A great leader has to know this thin line and make judgment calls as to when to be firm and when to be pliable. **Perseverance** is not a sign of inflexibility. Irrespective of what kind

of organization or team one is leading, challenges will abound; hurdles will need to be crossed; distractions will occur; moments of despair, disappointment and despondence will arrive. Through all this, the team will certainly go through highs and lows. The leader has to weather all the storms and show the team that (s)he is still on track. When team members have doubts, the leader has to provide the unwavering stability and steadfastness that would boost the team's self-belief that the goals can indeed be achieved. In addition to the avoidance of giving up on one's goals, firmness is also important in adherence to certain principles, moral or ethical. There is sometimes a tension between sticking to one's values and following popular opinion. This is especially true in democratic politics where popular demands may not match one's scruples or beliefs. While a democratically elected leader might say that his/her mandate is to honor the wishes of the people, (s)he would be criticized for being "populist", if (s)he shies away from tough decisions to do the "right thing", simply because they are unpopular. Ideally, if the popular view is against what is ethically and morally right, the leader needs to convince the population about the latter first. In other words, the leader needs to "show some spine", while still being democratic.

Integrity is another essential character that a good leader must display. If the leader's integrity is questionable, clearly the team members would have no respect for the leader and his/her credibility would be undermined. In such a scenario, the leader's ability to lead comes into serious doubt.

Regardless of leadership style, an effective leader must "keep an eye on the ball", i.e., stay **focused on the goals** of the team or the organization that (s)he is leading. While delegating authority to competent lieutenants or sub-team leaders is a generally great idea, effective monitoring of their performance is critical to ensure that the goals are achieved. This is also needed, to take timely corrective action whenever the team or teams are straying away from the agreed

path, or the achievement of stated objectives seems to be in jeopardy. Ideally, such goals and objectives would be shared amongst the whole team and all these authority-holders. Focusing on results encompasses: defining strategic goals (owned by all team members), specifying expected results that contribute to goals, aligning programs and resources with results, monitoring and assessment of results, and linking rewards to results.

Does a leader need to have a grand **vision** for where (s)he would like the organization or team to go? Most people would say that a leader without a vision is not a good leader. But it depends on what type of task or activity we are talking about. Certain tasks do not require much of a vision; they may simply involve carrying out the activities governed by an already existing vision and strategy. In other words, if it is an operational team that is being led whose job is not to generate a new vision, the leader of such a team does not have to be a visionary. (S)he simply needs to know how to deliver a predefined set of outputs and get that done through the team. Having said that, if we are talking of a leader of a country, or even an institution or organization, clarity of vision is a must. One might say that someone without a vision may become a good leader, but will never become a great leader.

Humility is a rare (but important) quality in a leader. Oftentimes, leaders tend to become arrogant or drunk with power, and generally that would result in their downfall. Be it a leader of a country or that of a project team, the recognition that one person cannot possibly know everything and that we all need the advice, guidance and support of others in the team (and even outside the team) is a critical pre-requisite for success. If such recognition is genuine, humility would naturally set in and it would reflect in our behaviors both towards our team and towards others. Along with humility would come the respect for others, which is so important if the leader himself/herself should earn respect.

Finally, perhaps the single most important quality of a good leader is **empathy**. Empathy is the ability to relate to the feelings of others. One of the ex-presidents of the USA, Bill Clinton, is famous for saying "I feel your pain". Without empathy, it is difficult to understand one's followers and without understanding the people that we lead, it is impossible to get things done through them.

E. Core competencies / skills of a good leader

Even if a person possesses all the behavioral elements listed in section D of this chapter, there are specific rational skills that need to be learned (many of the behavioral qualities can also be learned, though most of them are imbibed through proper upbringing). Such skills may otherwise be called "core leadership competencies". Here primarily we are not going to concern ourselves with the technical skills in the areas of medical or health fields, but rather with the generic skills required of a good leader. **Technical skills or expertise** in the field of work are valuable for a leader to possess; such expertise often tends to result in greater respect for the leader. But a person with exceptionally good leadership skills can be effective even without technical skills, if (s)he has a broad understanding of the subject, is a quick learner, and has a team that consists of excellent technical specialists, complementing the leader and compensating for his/her lack of technical skills. On the other hand, a person with excellent technical skills without good leadership skills cannot be an effective leader or manager. In other words, the job of a leader is usually to "get the job done", rather than doing everything by himself / herself. That said, one must acknowledge that in professions like medicine, where the technical specialists are highly qualified, a non-technical person's leadership is often not accepted; a common question that is posed in medical circles about such leaders "what does this person know about medicine?" Clearly a technical specialist with good leadership skills might be the best combination, though this is hard to come by. Moreover, even with good leadership

skills, a technical specialist needs to make an extra effort to resist the temptation of micro-managing; if we know so much about something, we may naturally have a tendency to "meddle" in it.

Strategic thinking and planning: With a commitment to the organization's (team's) mission, the leader must be able to focus on the most important priorities and undertake strategic planning through a participatory process that involves everyone concerned. If the leader has a role of the visionary as well, the process would start with that vision; otherwise, the leader may need to develop the strategic plans within the overall vision articulated by someone else at a higher level. In either case, strategic thinking requires longer-term analysis and understanding of big-picture issues. In chess (and in real-life warfare), short-term moves are called "tactics" while long-term moves are called "strategies". Generally, the leader needs to focus more on strategies and leave the tactics to lower levels. Otherwise, (s)he may lose sight of the woods while focusing on the trees. The intellectual clarity and analytical abilities needed for good strategic planning process are essential competencies of any leader.

Managing People: By far, the single most important aspect of management is people management. Unfortunately, this is also the area where most managers are weak. This is because most of us don't get trained in inter-personal skills as part of our formal education. Without adequate people management, the leader is unlikely to get his/her team members to give off their best, towards the achievement of common goals. We have all heard some time or the other, statements like, "for this boss, I am willing to do anything", or "I can quite easily do it, but I am not going to, because I don't like the way my boss treated me". This competency encompasses: team-building and facilitating team-work, understanding and supporting team members, paying attention to their personal problems if necessary, but without intruding into their personal space, mentoring and guidance, treating people fairly and respectfully, delegation and

empowering team members, providing effective evaluation, feedback and encouragement, interpersonal relationships, cultural sensitivity and leveraging cultural values to the advantage of the organization.

Picking the right team is as important as leading it. In fact, if care is taken to get the right set of people to work with, the leader's job of managing them would be far easier. Great leaders usually surround themselves with the best advisers, whose judgment they can trust. In fact, it is often believed that the leader does not have to be intellectually brilliant, if (s)he has the right kind of advice. As noted earlier, no one person can possibly have the expertise in all the fields relevant to one's work, in today's complex and multi-disciplinary world. Therefore, identifying the skill-set required, and selecting the best available team members with those skills are crucial. On the other hand, in the real world, often we are given a team and may not have much say in its composition, except one or two changes on the margin. In such a scenario, the leader has to identify within the given team, each member's strengths and weaknesses and determine their roles accordingly. Generally, every person has something to offer; the trick lies in recognizing those strengths, and emphasizing them (more than the weaknesses).

Time Management: By definition, a leader would have more pressures on his/her time than a team member. It is critically important for a leader to learn professional time management techniques. This does not mean rushing through everything. On the contrary, good time management will enable us *not* to rush anything. Good time management will allow us to give time to the team members as well as to the outside world, while leaving still enough time for intellectual tasks and finally to leisure and relaxation.

Partnership management: As the leader usually represents the team to the outside world, developing partnerships, establishing

relationships and negotiating effectively, political and diplomatic skills, are important skills for an effective leader to have.

Communicating Effectively: This is a fundamental skill that is required in any job. But it is particularly important for someone playing the role of a leader. Communicating clearly and candidly, without mincing words, but at the same time avoiding rudeness or impoliteness, is an art form. Communication skills include both verbal and written forms of communication and a leader needs to excel in both. This is in fact, an underlying skill in many of the other competencies listed in this section, e.g., people management, negotiations, facilitation, partnership and change management. Communication skills encompass the ability and willingness to listen as well as articulating one's views. **Good listening skills** are in fact a pre-requisite for effective communication, which is usually bilateral or multi-lateral; if one focuses only on articulating one's own points without listening to the others, the other party also stops listening. A lack of listening makes our own articulation less than optimal, because we fail to understand where the other person is coming from and will not be able to tailor our messages to suit their perspectives. Clearly developed techniques such as active listening, empathizing and paraphrasing need to be cultivated and learned.

Negotiation Skills: "A good listener tries to understand thoroughly what the other person is saying. In the end he may disagree sharply, but before he disagrees, he wants to know exactly what it is he is disagreeing with", said Kenneth A. Wells in his Guide to Good Leadership. Thus, listening to someone does not necessarily mean agreeing with that person. A leader often has to use negotiating skills both within the team and with the outside world. As the leader of a department, institution, or a team, one has to negotiate for resources; one may have to negotiate terms and conditions with contractors; the leader may have to negotiate policy matters with higher authorities. Within the team, the leader will invariably come across situations

where (s)he has to negotiate with one or more team members on technical, policy, or even financial matters. Sometimes, the leader is also put in the position of arbitrating or mediating between two of his/her team members. Good negotiation skills include excellent communication skills, professional and impartial relationships, unshakable trust, an understanding of various stakeholders and their interests, and ingenious thinking to consider innovative options and alternatives to arrive at win-win solutions that addresses the interests of most if not all stakeholders.

Facilitating skills: This include facilitating meetings, leading discussions, and reaching a consensus. *Any leader will often be called upon to lead meetings and discussions. Some of the sub-skills under this heading include: clearly enunciating the purpose of the meeting, ensuring good group dynamics in meetings, allowing everyone a chance to express their opinions, avoiding the domination of the discussions by one or two "type A" personalities, preventing any personal attacks from occurring in the meeting and detracting from the meeting's purpose, providing the gate-keeping function, i.e., not allowing discussions to go wayward, developing a broad consensus and capturing the gist of the consensus that emerges. Moreover, the leader will need to play a fine balancing act between the role of a "facilitator" and that of a "leader". A boss of mine typically used to start the meeting by saying what his opinion is; clearly this precludes any further discussion; so, ideally, if the leader wants to learn from the group, (s)he should reserve his opinion for later, after listening to the others. On the other hand, sometimes, the group looks up to the leader to provide more than just facilitating a discussion; the group would certainly want to know what the leader thinks about the issue at hand.

Problem-solving. A leader is often in the position of having put out fires. But apart from serious crises, there may be smaller problems that also demand the leader's attention. A smart leader would have set

up systems to address most problems without his/her intervention. The leader would need to intervene only in exceptional cases. However, the leader must possess the necessary skills to analyze a problem, consult with appropriate persons, and come up with options to solve the problem, sometimes ingeniously. Even if systems are in place to solve problems, some issues are bound to filter upwards to the leader for resolution. These could be problems of inter-personal nature between two or more team members; or they could be issues requiring a policy decision, or operational problems relating to implementation. Whatever they are, the leader must be in a position to get them resolved – with the involvement of other team members, legal procedures or whatever is required.

Change Management: Any organization will face the need to change at some time or the other, because of changes in its operating environment, client needs, or sometime simply because of a change in the leader (new leaders invariably want to change things to leave a mark of their own). In my fifteen years at the World Bank, I have seen so many attempts at reorganization, restructuring, renewal, reform, repositioning and retooling – call it what you will, but I quickly learnt the meaning of the cliché, "only thing that is constant is change". Change is always traumatic, sometimes disruptive and may even be disastrous if not managed well. All change will encompass "winners" and "losers"; and invariably there will be groups that would resist it. A clear understanding and analysis of the various winners and losers of a proposed change or reform, a mitigation plan

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**Consensus* *does not necessarily mean unanimous agreement, or even a majority decision. Consensus is a state of the discussion, where most of the people in the room feel reasonably comfortable with a decision, i.e., "they can live with it", even if that is not their first choice or preferred decision. Usually consensus is not achieved by voting, because in the case of a vote, a certain proportion of the group will have voted against a decision and they may never feel "comfortable" with the decision. Voting is divisive; consensus is more inclusive.*

to address the concerns of the "losers" and minimize their losses, and a communication plan to ensure that the reform has broad-based support are the minimum essentials that must be in place. An effective leader would have such understanding and would be able to steer the ship through the invariably troubled waters that reform brings.

F. Some real-life applications of good leadership in the medical / health profession

In this section, we will consider some practical examples of how leadership skills might be applied in our respective jobs. These are anecdotal, and based on real experiences of the author; they are not intended as an exhaustive lesson in leadership, but just a sampling of interesting, illustrative and instructive stories. The important thing is to glean lessons from them, and apply them in contexts that we may come across in our own lives. Every situation is different however, and no lesson would be universally applicable without adaptation.

Take the example of a hospital. Recently, I heard from someone who had an experience at a famous private hospital. This hospital had built its reputation around the great surgeon who heads it. There is no question about the director's skills and reputation as a surgeon. But the person who spoke to me about this hospital described how it lacks proper coordination between staff and between various units of the hospital, how several staff did not seem to know what they were supposed to do (though they were all very kind and tried to be very helpful), and how the surgeon did not even have the time to speak post-operatively to the patient whom he operated upon or their relatives; he was clearly overworked. This hospital director is probably a great surgeon but not necessarily a good leader. He appears to need a good administrator to ensure sufficient coordination, and to develop a second tier of management to whom he can delegate certain functions, and even groom this second tier to take over when he might not be available. He also needs to train his staff better and establish systems that can take care of issues as they

arise. This is a typical case of a technical specialist without leadership or management skills; and one where the leader does not trust anyone else fully to fill his/her own shoes but evidently does not have the time or skills to do it all.

I recently had another experience with a different hospital, quite a large one in fact, where a friend of mine had surgery. The surgeon was very soft-spoken, competent, and at the same time, an effective leader. Despite his busy schedule, he visited the patient everyday after the surgery, spoke very kindly to the patient, and answered all her questions patiently, demonstrating his good practice to his subordinates. It was clear that he commanded the utmost respect of his subordinates merely by his competence and setting a good example. When my friend had difficulties with the nursing staff, the feedback was given to the surgeon, who ensured that every significant person in hospital administration came around to see the patient and understand the problem, to ensure that it does not repeat itself. Though the nursing competence would need time to develop, my friend appreciated the fact that criticism was taken in a constructive spirit; this is sure to improve matters for future clients of this hospital. When the surgeon was on leave one day, there was no breakdown in the care provided, as he had clearly established effective lower tiers of surgical professionals to handle any exigencies competently.

One of my earliest experiences of professional leadership was when I was appointed as the Principal of a School of Health Technology in a town in Nigeria. I was just 28 years then, and the only reason that I was appointed to that position was because of my public health degree. I had no training in leadership or management, and had to learn quickly on the job. The school had 20 teaching and 25 non-teaching staff, about 400 students, and had severe resource constraints, apart from a general lack of work ethics. Most staff took their jobs very casually, the school was in bad shape and the students could not care less. Of course corruption was prevalent, though I did not know the extent of it, or how it worked. But being a foreigner, and

a young inexperienced one at that, I had to be careful not to take the school by storm and try to change everything overnight. My strategy was to take the senior-most Nigerian teacher into confidence, show him a lot of respect and seek his advice on all matters. Furthermore, I tried to show that I am like everyone else and am willing to get the job done contributing myself hands-on to the tasks that needed to be done. For instance, if the school grounds or the class-rooms needed to be tidied, I would go and do it myself, putting the cleaners and gardeners to shame. This paid off, as I was more easily accepted through the senior teacher's good offices, and my attempt to "lead by example" was seen as a sign of humility. I overheard comments like: "If the Principal could do it himself, why not us?" Eventually, the cleaners and gardeners would never let me do their job, which allowed me to focus on my real job. Obviously, one must not overdo this, lest we fall into the trap of doing others' jobs and neglecting our own. Also, this approach may not always work; some of the team members may simply take advantage of the leader and let him/her continue doing their work. It is something worth trying, within limits.

When one does not have formal training in leadership and management, one has to learn from others. It helps to find some good mentors who have had the experience of leadership roles and seek their guidance and help. I was fortunate in the World Bank to have a couple of such senior mentors. One such mentor, who had been a senior bureaucrat in India before joining the Bank, taught me much. I still remember how he handled a very challenging situation during the preparation of a World Bank financed project for Bangladesh. The project was being supported by some donor partners and opposed by several other partners, though it was really a good project and the technical analyses and experiences elsewhere had proved its value, and the client (the Government of Bangladesh) wanted it. So, the problem was how to convince those partners who were opposed to it. The master-stroke that my team-leader came up with was to invite

those partners also to join the World Bank's project preparation mission – even though they were not going to finance it. The idea was to involve them in its preparation, seek their advice and inputs as interested parties. Generally partners not financing a project would have nothing to do with the project mission; at the most the World Bank mission might visit them and hold a meeting or two with them; to invite them to be a part of the mission was quite unusual. This gesture was greeted with surprise, but the partners did join the mission, and though the mission was a bit rocky, in the end, the project went through successfully. "It is always better have your detractors inside your tent, rather than outside; of course, you must always be conscious of the fact that they are indeed detractors."

More recently, I have had to lead the preparation of an Avian Influenza Control Project. But I was not the only leader on this team. As Avian Influenza affects poultry, with the potential to spread to humans, there are at least two sectors involved in such a project: the animal health component comes under the livestock sector, which is usually under the Ministry of Agriculture and of course the human health component is handled by the Ministry of Health. Therefore, the World Bank team for this project is inter-sectoral, i.e., involving staff from the Agriculture and Health sectors and had two co-leaders. Sharing leadership calls for special skills and attitudes and can be challenging. The ability to take joint decisions, treating one's co-leader with respect and an appropriate division of responsibilities based on respective skills and strengths are just some of the aspects that make joint leadership different from the more usual unitary command. Of course, even in circumstances where the leadership is unitary, often there are implicit layers of leadership which the explicit leader must be aware of and deal with in a sensitive manner. Coalition governments are an obvious example, where even though there may be one Prime Minister or Chief Minister, there are other power centers, which could be equally or even more important. Fortunately, in my experience at the World Bank, my partner was a

great pleasure to work with, he never made me feel inferior or less important, and knew how to sort out any differences internally, rather than publicly. Of course I reciprocated his respect and was careful to ensure that decisions were jointly made, responsibilities were clearly defined and we did not step on each other's toes. One may be in similar situations even in a workshop or meeting, where sometimes we may be called upon to co-chair a session – often without prior rehearsal. So, it is important to develop these skills of sharing leadership just in case.

We saw the importance of partnership-building as part of leadership. Nowhere is this more important than in the field of international development (including international health). Increasingly, the development community is recognizing the critical need to work together, coordinating the contribution of various agencies, avoiding duplications and contradictions. The World Bank, being one of the largest financiers is often put in the position of leading the donor agencies (though ideally such leadership should be provided by the Governments of the recipient countries, the reality is far from ideal). Of course, the World Bank is not necessarily the most popular organization and has to deal with the perception that it could be domineering because of its financial clout. One of the first lessons in leadership that I learnt from being part of such partnerships "led" by the World Bank is how to treat other partners with respect. For instance, in the Bangladesh consortium of health sector donors, the World Bank team leader made a conscious effort to yield the chairmanship of joint meetings to other donors, by rotation. Gradually, the consortium instituted a system of electing the chairperson once a year and more recently, the Government has begun to take the leadership role.

A unique professional experience of mine was when I served as the Health Sector Reform Advisor to the Minister of Health in Trinidad and Tobago. Watching my Minister from close quarters taught me many a lesson about leadership. The usual challenges faced by a

politician while dealing with the bureaucracy get multiplied many-fold if there is a reform program being attempted. Moreover, Trinidad and Tobago is a country where different ethnic and religious groups live together, but undertones are inevitable, especially when it comes to politics and bureaucracy. Therefore, even-handedness is a very important quality that any leader must possess to avoid failure. Regardless of one's own ethnic background, decisions must be taken impartially – and seen to be so; the Minister was exemplary at this. Additionally, the Minister taught me how he could be very personable, polite and friendly while being firm, decisive and principled – a very special quality indeed. He also taught me how a leader must always back his/her team in public. Even if he did not agree with something that a team member did, he would never condemn the person in public; on the contrary, when something goes well, he would be the first to give credit to his team members. Finally, being a medical doctor by profession and being a Minister in a very small country (of 1.2 million population), he displayed a tremendous amount of simplicity and humility.

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Quality Standards of Medical Care

Dr. Vikram Kashyap

Inability to let the well alone
Too much zeal for the new and contempt for what is old
Putting knowledge before wisdom, science before art and cleverness before commonsense
Treating patients as cases
Making the cure of the disease more grievous than its endurance

(With apologies to Sir Robert Hutchison!)

The above sums up what is, for the most part, taught in medical colleges.

There was a time when a doctor was trained only by apprenticeship. Many of the present generation of recently retired teachers would recall their teachers, of the Sir Lancelot Spratt type, who not only taught medicine, but inspired their pupils to learn the art of bedside practice. This was in the true spirit of *"To cure seldom; to comfort: often; to console: always"*.

Changes started to take place in the practice of medicine all over the world and in India too. (For purpose of this article in this book, the author confines himself to the Indian scenario). Patients have become more knowledgeable, and therefore, more demanding. The overt influence of commerce and politics right from the entry stage of a young student into a medical college, throughout every step of his/her career, became a reality. Consumerism in all spheres of professional activity led to its inevitable spread to the medical profession, not because of want of resistance, but, perhaps, because of lack of credibility of the existing mechanisms of redress for the aggrieved patient.

Nothing has changed the way medicine is being practiced today, more than the landmark judgement of the Hon'ble Supreme Court of India in the 'V.P. Shantha versus IMA and others' case. Since then, medical practice has come to be viewed as a service to be rendered in return for reward and payment, with justifiable expectations by the consumer of such services, of standards of quality of the service so rendered. Thus medical practice became on par with service by all other professions including hotels, airlines, insurance, hair dressers, laundry and shoe shining.

Having classified the practice of medicine as a service rendered to a consumer for a fee, medical professionals were perforce involved in process management jargon of quality assurance, service performance, business verticals and continual improvement.

Medicine as a Process

A process is defined as 'an activity into which there are inputs, there is value addition to these inputs, and from which emerge certain outputs'. To the average doctor, this sounds suspiciously like the basics of the digestive system taught in high school general science! Like it or not, we plod on to understanding quality standardisation.

To understand medical process quality improvement, let us for a moment, visit two factories manufacturing knee hammers. Factory – A, buys steel, machines it in its lathes, attaches rubber at one end, and employs a quality manager to inspect the hammers at the end of the manufacturing line. He sends some for packing and out into the market for the increasing numbers of medical students and others either with loose rubber tips, or improperly machined handles or with poor finishing are thrown into a plastic bin as marked 'rejects'. At the end of the day, the rejects bin will be full.

On the other hand, let us visit factory - B. Here, steel of Bureau of Indian Standards (ISI) grade is bought, machined in old, but well maintained lathes, operated by machinists who are all properly

trained, qualified, experienced and understand that the items they are machining are to be held in the hands of a doctor or potential doctor, to be used to make a diagnosis upon a sick patient to help him get well. The machinist then passes these handles on to a colleague who fits the rubber ends correctly into groves, tightens the screw to hold it in place and sends them to the quality manager for inspection. This quality manager also has a bin marked 'rejects'. But he does not get more than two or three in a week, while the large majority of finished knee hammers are packed and sold. Doctors and medical students who buy the knee hammers manufactures by Factory – B are satisfied with the quality and in turn tell their colleagues *"Buy B hammers, not A hammers. They last longer, are easier to hold, lighter and don't tear your coats when you put them into your coat pockets"*.

Factory B is using the 'Process Approach' to ensure that quality is adhered to at every step. Factory A follows the ad hoc one knee hammer at a time approach and loses out in the market. The focus of manufacture in Factory B is on the process, rather than on the product, the knee hammer.

Development of Quality Standards

This 'Process Approach' manufacturing principle, described above, was applied by several countries to manage their hospitals and medical practice programmes to develop 'Standards'. Perhaps the most well known today is the Standard of the Joint Commission International, the international arm of the Joint Commission on Accreditation of Healthcare Organisations, USA.

Manufacturing industries, led largely by the automotive sector, developed generic standards drafted by the International Organisation for Standardisation, ISO. These standards evolved through various numbers, from the year 1987 through 1994 to the currently applicable ISO 9001:2000 standard. (This is further revised in 2008). Though dripping heavily with manufacturing industry language, it has come to be accepted by the service sector also, with a

few common-sense interpretations by users, from hospitals, shops, restaurants and other service sector organisations.

Principles of managing quality in a hospital

Similar to the 'guide' books we have used in preparing for the MBBS and earlier examinations, a guide called "ISO 9004:2000" has been prepared by the International Organisation for Standardisation with the aim of helping users to understand the requirements of the standard ISO 9001:2000. Looking at it with the endoscopes of medical tunnel vision, it describes eight essential features to practice modern medicine. These eight principles need to be taught to medical students, preferably during, just before or just after their internships; definitely before they go out into the world as potential defendants in medical malpractice and consumer lawsuits. As these are not presently being taught in medical colleges, in keeping with the title of this book, these principles are described here. The author hastens to add that many business management schools have already incorporated these principles into their curricula.

Principles for Quality Assurance in Medical Practice

Principle 1: Patient Focus.

The practice of medicine centres on, about and around the patient. Every structure and function, machine and man, bed and chair, staircase, escalator or lift, needs to have this principle enshrined. Then, ICUs will have facilities for anxious relatives to at least have a virtual visit (already in vogue in some hospitals in India). Burly, mentally challenged security guards retired from the police or arm forces will not chase away elderly grandmothers trying to sneak-in a hug for their grandchildren. Unaccompanied patients will not have to stand in three different queues to show their prescriptions, pay up ("Exact change, please") and then obtain their medicines. Adherence to quality standards would start from hospital design conception. Architects will plan to have trauma wings at ground levels (anti-skid,

not Italian marble flooring) and preventive checks for the able bodied at higher levels. White coats and microbial flora laden neck-ties are already being banished from several modern paediatric and psychiatric hospitals. Quality standardisation would require architects and doctors to put themselves into the shoes of the patient. The welfare, comfort and convenience of the patient and his/her visitors would come first, foremost and always. Care, comfort, convenience and, most importantly, effective two - way communication, would be the first priority in a quality care oriented hospital.

Principle 2: Leadership.

Qualities of leadership have to be demonstrated, observed, taught, learnt and evaluated. This is never as important as in a crisis situation. Imagine a bomb-blast scenario, an increasingly plausible situation. The principles of 'Triage' are already being taught in those medical colleges where the teaching of Emergency Medicine is effective. All those who have had a stint in the Armed Forces, especially during exposure to active and field situations, would know the principles of triage and leadership only too well. The commanding medical officer's shouts to 'lead, follow or get out of the way' ring in one's ears even in family station MI rooms. The young doctor has to emerge as a leader in society, and lead by example. This means s/he has to not only lead, but set an example of correctness, exemplary behaviour with or without the white coat, common-sense, compassion and courage under fire.

Principle 3. Team Spirit.

This derives from the previous principle. United we stand and divided we fall. The spectre of dog eat dog is only too obvious for all those in private practice. Medical college teachers must encourage team study and ensure that everyone rises to the top. Instead, we are constantly reminded of the story of the Indian crabs, which will never allow their

kin to escape from the confining but open - topped jar. Whatever be their personal differences, medical students must be taught clearly, that the differing opinions get buried when a professional colleague is in trouble. This model of mutual cooperation must continue well into senior professional life. Concurring second opinions will then be the order of the day amongst professional colleagues. 'We agree to disagree' would become acceptable. We have to accept the reality that the practice of medicine is to a large extent subjective, based on the books read, the knowledge passed on by teachers, and most importantly, one's own personal experience. Everyone emerges a winner: the patient gets his second opinion. The first opinion giver gets a validating, concurring second opinion. The giver of the second opinion gains the confidence of his colleague, with whom he probably differs, but remembers that most, if not all, roads lead to Rome and cure of illness.

Principle 4. Process Approach.

As described in the analogy of the factories above, the dictum is to look upon practice situations as a process, break it into its component parts (resuscitation, blood gases, intubation and ventilation spring to mind as 'sub' processes for a respiratory emergency process). These are analysed for the performance of these component parts, to do a better job next time. Never, ever, must the intention be to criticise, point fingers or adopt a 'better than thou' approach. Again, this is a continuation of the team spirit principle.

Principle 5. System Approach.

Inter - related processes form a system. When all the other four principles are working full steam, the technicians in the laboratory will not need to be told, to immediately inform the concerned clinician when the serum potassium reads 6 on the auto analyser. This is an example of the 'laboratory process' being seamlessly integrated into the 'clinical care process'.

Principle 6. Good relationships with suppliers of services and products.

The biggest suppliers of services in a hospital are the specialist consultant doctors. Unhealthy relationships rule the roost. Therefore we have consultants constantly looking out for pastures new, hospitals constantly devising strategies for poaching rather than identifying, establishing and nurturing relationships with their consultants. Beyond medical colleges, even health management courses must teach that parasitism and exploitation must give way to mutual growth. This holds true for suppliers of products, too, like disposables, medicines, furniture and even construction material for a hospital's expansion. Manufacturing industry has consistently proved that it is more cost effective to maintain an existing vendor and encourage him to improve, rather than spend good money developing new vendors of old raw material. This principle becomes particularly relevant when hospitals face high employee attrition rates.

Principle 7. Factual Approach to Taking Decisions.

Analysis of statistical data is important in clinical and in non clinical situations. When super specialists were few and some hospitals had more money than brains, empire building was the rule. Small hospitals bought expensive CT scanners to cater to two scans per day, for the big-name neurosurgeon who threw his weight. This is a reverse of the 6th principle, but illustrates what happens when there is no team spirit. On the other hand, data analysis of the results of the endoscopist, who consistently gets excellent results in sick children, will no doubt prove that he could do even better with more hands and better endoscopes. This point merges into the next principle.

Principle 8. Continual Improvement.

Even as students are taught to endeavor to improve upon their marks tally, practice parameters must be benchmarked in every individual or hospital practice to improve upon one's performance so that we keep

up with changing times and technology to offer better medical services to society. Improvement does not pertain to mere increase in numbers. That would invite suspicion about commercial or (un)ethical considerations.

All or most of the principles are already in vogue, to smaller or larger extents, in most teaching hospitals. Obverse and reverse examples of each principle would come to the reader's mind even as these are being read. However, systematic application of all the principles in a guided, documented manner, with resultant evidence of improved care, constitutes Quality Assurance in Medical Practice.

As a typical example, one may look at a hospital which has a high nosocomial infection rate. Patient education on hand washing (Principle 1) with all medical and nursing staff demonstrating the same (principles 2 and 3), followed by changes to the air handling units (principles 4,5 and 6), close microbial monitoring (principles 5 and 7) would lead to lower infection rates (principle 8). The real beneficiary here is not the hospital, nor the staff, but the patients. That is the ultimate reason for the practice of Quality Assurance in Medical Care.

For this quality assurance model to sustain itself, certain mandatory requirements have to be identified and then demonstrated as met. These constitute documented standards in medicine. For universal acceptance, these standards have to be easy to comply with, written in simple language, practicable, inexpensive, not divert the time and attention of the medical professional from his/her obvious goal of treating patients, must prove itself and withstand the test of time.

In 2004, the Government of India, in association with stakeholders from the Indian industry, set up the Quality Council of India (QCI). The QCI took a further step towards establishment of quality assurance standards for the practice of medical care. With the cooperation of the Ministry of Health & Family Welfare, Government of India, the National Accreditation Board for Hospitals and

Healthcare Providers (NABH) was established. NABH is a constituent body of the QCI. The Technical Committee of this body drafted the first set of 100 requirements and 503 elements, as the NABH 1st Edition 2005 Standard. This provides a framework for quality assurance and quality improvement in hospitals providing secondary, tertiary and quaternary levels of care who seek accreditation of their services. In August 2006, NABH has published a guideline document "Guide Book to NABH Standards" with explanatory statements. Several hospitals have so far received accreditation and many are implementing these standards. A second revised edition of the standard is to follow.

Ultimately, as medical practitioners and teachers of medicine will bear out, the final accreditation of quality is the smile on the face of the patient who is happy in the knowledge that he has received quality care.

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Marketing in Medicine - Six 'P's

Dr. K.S Shekar

Medicine as a business is a bad business. This I have stated earlier and will continue to do so, irrespective of being the Head of a successful Corporate Hospital. Probably, I was a bad choice as a speaker on the subject: 'Marketing in Medicine'. But this opportunity to speak has made me to update myself on the subject and probably to redefine, improve and justify my own opinion on the subject.

Let us define the subject:

Market can be a noun or a verb - place where you sell your wares or the process of selling respectively. 'Medicine' denotes not the drugs or potions, but the 'service' of rendering health care. In other words 'selling the health care service' that is what the organizers want me to speak. How relevant is the subject today?

In the early days, materials for day-to-day life support were bartered. Five chickens for a goat or five goats for a cow… may be something like that. During my early childhood, the wages to the farm laborers were paid in kind – paddy or rice. The laborer would then take a portion of it to a shop and barter it for other commodities like spices, salt etc.

Few things could never be bartered in good old days: education, health care and prayers and rituals; that are to say Vidya, Vaidya and Vaideeka. Those were sacred jobs and invaluable and none could demand a price. The performers of these duties were expected to accept whatever was offered to them!

Just as the market and marketing principles changed, the values

governing the sacred services also changed. Today, in 21st century what are we practicing? Is it ethical medicine, or business motivated medicine or market driven medicine?

If we decide to set our sail as the wind blows, medicine of today is business, health care is a trade and health is a product. We are trying to sell this commodity in the market place of the society ruthlessly, with profit as a motive, for the investments made towards education, institution, instrumentation etc. Marketing in such an intimidating atmosphere is impersonal. All that counts is the value for the shareholder – the investor.

For a marketing specialist, active competition ought to be both the style and goal of a marketing program. He certainly believes that active competition will control cost, improve efficiency and at the same time increase profitability. Can the marketing in medicine be different from the standard format of business management? Is there something that what business schools do not teach?

Every Marketing specialist will speak of four factors – 4Ps – that are essential to understand the marketing principles:

1. Product: health service and its positive effects on the person's well being.
2. Place: the institution i.e., hospital, diagnostic center etc, location hours of work; accessibility etc.
3. Price: charge payable for service (affordability)
4. Promotion: to make the patient aware of the services rendered by the institution.

Why Healthcare Marketing?

1. To defray the increasing cost towards health care services.
2. To prevent misplaced developments without proper market research leading to loss to the institution.

3. To optimize utilization of services and consult hours.
4. To prevent duplication of the services.
5. To inculcate a sense of professionalism by the consultants and staff.
6. On being demanded by the public for new procedures.
7. To alleviate consumer dissatisfaction.
8. As a part of business module.

On the whole one can justify marketing in medicine in ever so many ways. A marketing research is necessary to find out the need of the society and its expectations even before a hospital is established. But this is never done at least in our country, which leads to duplication of services and underutilization of the hospital beds and consult hours. An example of bad service is that there are five MRIs at a walking distance from The Bangalore Hospital in South Bangalore. Each one must be underutilized. Marketing strategy from these institutions will be to maximize the utilization of their own MRIs at any cost. This in turn leads to patient manipulation and even mercenary tactics to attract patients. Patients end up paying for institutions' folly.

Health institutions must become competitive and then only quality can be assured. Intense marketing may lead to expansion of the hospital at the expense of other hospitals. Marketing should not lead to over utilization of beds than providing quality care. These will be detrimental to health care delivery system. Every new hospital ends up in pilfering consultants, nurses and technicians in addition to patients from existing hospitals!

For the established four 'P's of marketing elements we should add at least two more:

5. People

6. Public Relations.

If one refers to marketing chapter in any management textbook, the people who will be targeted by the marketing executives are called the CONSUMERS. They in turn are patients who need health care, physicians who want to utilize the services of a hospital for treating their patients, employers and labor unions who want their employees and members of the association to avail the facilities provided, employees themselves and public at large. One will also have to consider marketing with Government and other regulatory agencies, insurance companies, TPAs etc, to apprise them how good a facility you have. With 'health' as the new BPO, health tourism is being actively marketed not only in India, but also in South East Asia, Middle East and in European countries. I had the privilege of going as a National Delegate in one of the marketing expeditions to South East Asia. I have to admit that it was the most stupid exercise I had ever ventured. They are far ahead of our country in technology, expertise and knowledge and skill bases. Who will come to India for medical treatment are those low-paid Indian workforces living in those countries or those who neither enjoy the privilege of having health insurance nor governmental patronage. Whatever patients we get in our hospital from overseas belong to such category only.

But if one wants to attract international patients, we have to upgrade our institutions and market them with National Board for Accreditation of Hospitals or Joint Commission International for Accreditation of Hospital, USA.

The People:

But do our private medical service providers and doctors know the true face of Indian people? What is really needed is to understand the economic profile of our people and then package products based on their needs and affordability and market them for their own welfare. In an egalitarian society, it is possible, with true private, public participation.

Out of the one billion plus population of this great Nation, over 35% live below the poverty line. There are another 33% of the populations who do not have adequate financial means to afford proper health care. This leaves 32% of upper middle class and high-income group who can afford their health care expenses. Even here, there are urban and rural mix, latter being deprived of proper health care due to lack of accessibility.

When we say marketing in medicine, we really mean 20% of 32% of Indian population who live in urban conglomerate and probably can afford. That is to say less than sixty four million people! Of this less than 8% fall sick and less than 1% need admission to a hospital, i.e., 640,000 people.

The traditional approach to health care to the poor is to provide it free. This has the feel of philanthropy. Charity might feel good, but it rarely solves the problem in scalable and sustainable fashion.

Private Health Care Market:

As of now, the health care market is at 5.2% GDP which amounts to Rs.103,000crores, of which Rs.69,000 crores is private spending. If our growth rate steadies at 6%, and at the present rate, health spending will reach Rs.194,000 to Rs.270,000 crores by 2012. With the new impetus on economic front, a spurt in growth to 8% of GDP the health care spending may sky rocket to Rs.320,000 crores. All developed nations invest between 7 to 10% of GDP in health care.

As of now, of the health care spending, Government and employers spend nearly Rs.37,000 crores while out of pocket spending is nearly Rs.63,000 crores. Of these charitable hospitals take away 7%, private practitioners 40%, mid market hospitals and nursing homes 42% and up market hospitals 7%. Corporate hospitals, which provide highly specialized and tertiary care, are actually competing for 7% of total revenue available in private health care.

A research study made into the Aravind Eye Hospital is a real eye opener. Aravind Eye Hospital group see over fourteen lakh outpatients and operate two lakh patients in a year. Of these nearly 65% of surgeries are done totally free. The cost to paying patients is certainly lower than prevailing price in Bangalore for similar operations.

In The Bangalore Hospital we have SMILE TRAIN INC. USA., sponsored Cleft Lip Surgical program. We have operated nearly 1000 cases totally free during the last five years. The subsidy we get from the sponsors is less than 40% of the actual cost to the patient and the deficit is written off by the Hospital Management. Paying patients treated in the same period is less than 10%.

It is really not necessary to do any service totally free. Most of the patients are willing to pay at least some part of the hospital bill though not completely. Rich-poor cross subsidy is the only way out. The sense of philanthropy has to emanate from within the hearts of the professionals and managers. Someone has to play Robin Hood!.

Market research certainly will help us to make the health care projects successful:

1. Reduce investment in infrastructure

   Avoid duplication of services

   Avoid non-cost effective equipments.

2. Reduce cost to the patient

   Fixed costs – by reducing and at the sometime maximizing the utility of man power and equipments.

   Variable costs

   - Prescribe drugs by generic name
   - Purchasing in bulk
   - Proper inventory management

3. Treat more patients – even if they are paying less

Marketing in Medicine:

Let us come back to the core subject, marketing in medicine.

Whenever a youngster sought my advice before he started his private practice, I would advice him that the best place to start his practice is either his native place or the place where he got educated in medical school. At his native place, he gets a strong backing of the community in which he has been brought up. The community itself is proud of the achievements of one of its members and want to extend all help to him to be successful. Alternate is the city where he underwent medical education. A medical graduate generally spends five years during undergraduate and three years during Post graduate studies. He will invariably know most of the doctors passing out of his own college for a period, which extends up to eighteen years. Every one of them is proud of the accomplishments of one of their peers and want to support him.

If you want to settle down in a totally new place, you have to have something new and more than what others have to give to the people. That is to say that you have to have new expertise, special skills and new knowledge.

In my own case, I studied in Mangalore, Hubli and Madras (now Chennai) before coming to Bangalore to settle down. Inspite of being officially the first Plastic Surgeon in the state it took more than five years for me to establish the specialty and my own place in private practice. On the contrary a noted Sonologist in Bangalore, being the Bangalore Medical College product, with strong community background and the first properly trained sonologist in private practice became a success overnight. I had to sell my specialty myself across the state by innumerable lectures and workshops. That is why all mineral waters are Bisleri and all diazepam are Calmpose. First one always catches the eye easily.

Public Relations:

This brings us to the last of the 'P's in marketing in medicine, i.e., Public Relations.

C.N. Prahlad[1] a noted economist cites two examples of good public relations and advertisement drive making a brand of soap a house hold item to be possessed even in remote Indian villages. Today everyone, rich or poor relies on mineral water bottles while away from home. These are examples of putting a product in the palm of the people with positive benefits for the money spent. But health care facilities cannot be marketed in similar fashion. Health is a hypothetical state and none want to believe that he is going to be sick at any time. How many of us buy third party insurance in contrast to comprehensive insurance for our vehicles? Similarly, life insurance policies promise benefits in case of death, at least in good old days; who cares?

Standard techniques used by the Marketing Executives are really not relevant in medicine. Advertisements of the hospital and its services may help in a small way. It is generally believed that every major hospital has all the facilities available, unless it is a single specialty hospital. Does an elephant need a bell to make its presence felt? Internet is probably the most accessed educational port now. Putting yourself and your institution in a website is the easiest and probably reasonably ethical means of telling about yourself. But one ought to be warned against non-realistic claims and misleading information.

Since blatant marketing is still scorned by puritans in the profession, it has to be done in a very subtle way. That is why public relation becomes the prime method of marketing than marketing itself.

Public relations have to have two faces – one internal and the other external. The internal face is the doctor/consultant himself and the external face is Public Relations Department and all other employees of the hospital.

Success or failure of a consultant solely depends on the consultant himself, because he is the prime marketing man and his patients are his true marketing executives. There cannot be a better ambassador than a satisfied patient for spreading the goodwill. Similarly an excellent teacher is always a success in private practice. We have innumerable examples of such persons. An excellent teacher combined with exceptional craftsmanship cannot be stopped in private practice.

When we are young we believe that we know everything and tend to be egoistic. As we grow, we start doubting, because the patients do not behave in the same way as we thought and we see good or bad results contrary to our established mindset. As we grow old, we start believing that there is something beyond all of us that controls the disease process and healing power. That is when humility replaces an egoistic person.

First and foremost the doctors ought to climb down from their own exalted position of health dispensers by the magical power in their hands. There was never any magic in the first place. Think that the patient is the boss and do everything to please him. If he is not satisfied, it is you who is going to be fired from his service! He can always find other alternative service provider.

Assess yourself to know how polite you are:

1. Did you open the door for your patient?
2. Did you greet the patient when he came inside your room?
3. Did you address him by name?
4. Did you offer him a chair?
5. Did you sit down after he sat down?
6. Did you engage him in a routine conversation about himself, before going to his medical history?

7. Did you wash your hands before examining the patient?
8. Did you first explain the examinations that you are going to do?
9. Did you assure the patient that you are not going to hurt during the course of the examination?
10. Did you take care that you examined the patient in privacy?
11. Did you have a female attendant while examining a female patient?
12. Did you write legibly the case record, prescription etc? Is it readable!
13. Did you explain the problem?
14. Did you explain the prescription?
15. Did you escort the patient to the door and opened it for her/him?
16. Did you say thank you for seeking your help?
17. Did you assure the relatives too?
18. On the whole did you make the patient comfortable while he was with you?
19. Did you write a letter of thanks to the referring doctor, giving details of the patient's problem and treatment plan?
20. Do you think that the patient will return to you?

These are normal etiquettes or bedside manners. The list can be expanded to include the patient/doctor or employee interactions in the ward, or/and at the time of discharge.

If the consultant has not made the patient feel needed and happy at the first instant itself, he is not going to return to you or to your institution whatever may be the other incentives, and whatever your marketing/PR executives may do to please him. A lost patient is a lost business opportunity. It takes seven times greater effort to get a new

patient than retain an existing one.

The other face of PR is the employees and PR department itself. A patient ought to be considered as a guest of the hospital akin to a hotel and all that is done to pamper a guest by a hotel has to be done in a hospital. A patient in the hospital is different kind of guest – a guest with pain and suffering who has come seeking relief. He has not come for a holiday. So it is the duty of every employee in the hospital, not just the PR department to attend to his needs, promptly and effectively and see that smile returns to his face, by the time he is discharged.

All the employees ought to be trained in the art of communication, body language, position and postures while talking to the patient and must adorn a friendly disposition. A smile costs nothing!

An area that we do not pay proper attention is our telephone service, which connects two - the hospital/consultant to rest of the world. Proper telephone etiquette enhances the institutional image. A bad telephone operator can drive away most of the patients. The management ought to understand and enforce that the telephone facility is essentially to provide access to the patients to their consultant and other facilities within the hospital. Selection of proper telephone operators and their training in the normal etiquettes are of great importance. They should be familiar with various organizations working within the hospital, consultants, their timings, and their support staff who can be approached in case of necessity.

In most of the smaller hospitals and nursing homes, Chief Consultant is also the owner of the hospital. Most of the patients are his own and he will requisition the service of other consultants to serve the patient depending upon his ailment. He is also the accountant and manger. There is a strong bond between the patient and his doctor. Here the doctor visits his patient on daily basis to enquire about his health and well being. In a major hospital a visit by another consultant even when he happens to be the CEO may be misconstrued as being too

'nosy'.

What is really necessary in all major hospitals is a periodic PR audit. Audit is done by requesting the patients to respond to various questions related to guest relations to elicit a feedback on the quality of service offered, to be noted and given on being discharged. These responses should be analyzed, discussed in staff meetings and remedial measures implemented. Every criticism is an opportunity to learn and improve upon. How nice it will be if the CEO writes a thanking letter to his patient for his critical evaluation of the services and the action taken by the institution to improve?

Few tips for making your patients happy;

Consider that patient is the boss.

Learn the art of listening.

Put yourself in patients' shoes and then decide how you will react.

Communicate with the patient continuously, even after discharge.

Patient in the hospital is the profit and all others are overheads

Make your hospital patient oriented, answer their problems, make policies that are patient friendly and see that your heads of departments visit them.

Every dissatisfied patient is your business teacher.

Downside of Marketing in Medicine:

If one thinks that everything is too rosy in hospital administration, forget it. Many large institutions have come up with enormous investments, of late. Many of them have non-medical CEOs too. There is intense pressure on these administrators to make the institutions a financial success. Since their employment is at stake, devious marketing devices are adopted by them to ensure patient referral, maximization of utilization of equipments etc. Most

common thing that is done is to manipulate the consultants to indulge in over investigations and over prescribing. Still worse is to offer cash incentives for the references made for major investigations and many more.

Medical Council of India has categorically stated that soliciting patients in any form is a major misconduct. Accepting/offering cash incentives for referring patients are also equally punishable offence. Indian Medical Association, Tamil Nadu Chapte,r few years back labeled such institutions as non-grata and boycotted them. A peoples' agitation is required to expose these black sheep.

CONCLUSION

In conclusion let us rewrite the six 'P's in Marketing in Medicine: People, Product, Price, Place, Promotion and Public Relations.

Finally marketing in medicine plays a very little role in the success or failure of a doctor or an institution. False claims cannot last longer. A doctor/medical institution can only be a success by their own hard work dressed with humility, compassion, charity, truthfulness and transparency.

Remember patient is the boss and boss is always right. Listen to him!

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Synergise to Survive

Dr. K.S.Shekar

The teacher gave the pupil a stick and asked him to bend it. The stick snapped. Then the teacher gave the student a bundle of similar sticks tied together and asked him to bend them. The sticks did not yield. The teacher concluded his lessons for the day: "united we stand, divided we fall". This has been taught to all of us from the very early childhood, but we often fail to appreciate and apply this principle in our life.

Take for instance a game of football. The center forward who generally scores the goal takes all the credit for the victory. But everyone knows that the champion player can only score a goal by the timely 'pass' of the ball from one of the side wingers. Cricket, hockey and other team games depend on the collective participation of the players.

Recently one of my grand nephews visited me along with his parents. His father informed me that his son was good in mathematics. So I asked the beaming little boy whether he would oblige me with an answer for a simple mathematical calculation. He, readily, said 'yes'. I asked him what is the sum total of two plus two. He answered quickly 'four'. 'If I say eight or ten, what will you say?' The little boy replied: 'no, it is not possible'. I said: 'son, this is synergism, or the mathematics of life. Ask your dad, he will explain to you'. The boy turned his eager face to his father who explained; "if you can lift 5 kg of weight and I can lift 10 kg of weight, together we can lift 20 or more kg of weight. That is how the life works. The sum total of an object is more than the total of its different parts. If each part is 2 units, the sum

total of 2 parts is eight or ten. Two persons doing a work independently is less effective than two doing it together. It is called the synergism or creative co-operation, the true mathematics of life!" The boy appeared satisfied.

By 1980, I was 'honorably' eased out of the government service. All my enthusiasm to serve people came to an end. I vowed to myself that I shall build a hospital, better and bigger than the usual government hospitals which will be the cause for envy by all the doctors. This inner urge to build a hospital became an obsession and people soon started talking about it as my mad project.

The secret of life is the law of attraction and it is said that if you constantly meditate on a subject, it appears in abundance. Get rid of all negative thoughts and concentrate on positive side of life, everything falls in place and one achieves the goal automatically.

Initially, a trust hospital was thought off. But it was soon replaced by a corporate body, as it was considered easy to ask for investments than give away donations. There was just one single principle that worked the magic:

'All our patients require the help of more than one consultant, a true multidisciplinary approach. Each one of us can practice independently and build small nursing homes for our patients. Why not put all our small nursing homes together and build a larger multi-speciality hospital?' The concept was readily accepted and 'The Bangalore Hospital' was born. A corporate hospital with co-operative spirit was built by doctors and patients for their mutual benefit.

A best employer for a doctor is he himself. It takes lot of time for the doctor to understand this. Initially a doctor is scared of his own deficiencies in knowledge and skill. He needs protection by a hospital. He looks for a job either in government or private hospital where he can pursue his career, experimenting on unsuspecting

patients while the responsibility rests on the hospital or the senior consultant. It became rather easy to convince the senior consultants in private practice and some others who had left the government employments prematurely to join hands. There is always an influx of doctors trained abroad wanting to work in a better hospital set up.

By 1990, we could put together nearly 50 promoter consultant doctors and another 350 patients, relatives and well wishers who agreed to pool their resources to build the Bangalore Hospital. It was a unique experiment, unparalleled in the medical care anywhere in the world. Everyone called it a 'doctors' hospital'. What stood the test of time and days of hardship was this unique feature of the hospital. "A hospital built and run by the doctors, for their patients'. We politely turned down the offer of investments by the industrialists and other moneybags. We refused to entertain offers of take over or hedge funds. However great the incentives were, we refused to sell our identity.

Today we are happy with what we have. The assets have grown phenomenally. The investors receive handsome dividend. The promoter consultants working in the hospital receive a small pay, which enables them to contribute to provident fund and receive gratuity. A pension scheme is being worked out for all the consultants working in the hospital. These are in addition to medical benefits.

This is a very small experiment on synergism or creative co-operative. This needs to be expanded where everyone from the Chairman to the lowest employee form part and parcel of the institution. They should have a say in the management, responsible for effectively and profitably running the institution and finally a share in the profits, which is beyond the bonus.

The concept of group practice is yet to establish in our country. Presently doctors work for their individual self. He is not ready to make his assistant a partner in practice and share the proceeds. For

the senior consultant, the junior is another bonded labourer and the junior always feels that he is being exploited. Bane of the problem is in the lack of transparency. Most of the doctors' practice is on cash payment and they go unaccounted where they do not have to pay any tax. How should a subordinate staff know how much the boss received and how much of it is accounted? The doubt lingers and leads to unhappy situations.

'Do unto others as you would like them do unto you'. We have tried to practice this Biblical statement from the beginning. All the facilities created for the consultants are equal and similar. All the purchases for a department have to be justified, economically feasible and serve the interest of the institution than the individual. The consultant's involvement in the hospital and running of the hospital is monitored. It is needless to say that in a group there will always be few who will find other side of the fence greener than their own. It will be unfortunate when a consultant feels that he/she is bigger than the institution that has nurtured him and moves out or develops a selfish motive to grab everything for himself. Some even shop around and return. These are all negative forces and short lived distractions. A true synergistic force like a mighty magnet will attract new talents who believe in the principle to its fold.

We doctors ought to learn and practice the true art of giving. All successful doctors are best in distributing all that is free – the vocal words – consultations to the patients, assurance to the relatives and encouragement to the juniors. When it comes to parting some money, they generally retreat. If you do not pay well your assistants, you cannot buy their loyalty. How will you then expect them to be co-operative and constructive? It will be a dream situation if a senior consultant can nurture a group – may be five people in a main specialty and three in lesser specialties. All work together and are responsible in OPD, ward and operation theatres; all look after each others patients and all are collectively responsible for all the patients.

The proceeds collected is shared on the basis of seniority, expertise and labour involved. Initially this could be limited to a department. Later this could be extended to a service and still later to all services in the hospital. Final scenario can be where all the employees will also receive a share in the hospital income which includes the professional income.

It is wrong to believe that the care of the patient is dependent upon the doctor alone. Every employee in a hospital has something to contribute to the patient's health. Ward boys have to clean the hospital, trolley boys have to carry the patients to the theater, sterilizing room technicians have to provide the instruments, and nurses have to assist, if a surgeon has to operate. These are synergistic sequences for a creative outcome. Why then all should not have a share in the profit as an incentive? This calls for total surrender of ego and selfishness!

For a resurgent India, to deliver health care for the masses who are generally less privileged, we need a band of talented younger generation who believe in selfless synergism. 98 percent of world's wealth is in the hands of 2 percent of the population. Every health care facility in private sector is competing for that 2 percent population. Forget them. If you are charged to serve the nation, group yourselves, co-operate with each other and build your own institutions for your patients and for yourselves.

Synergise to survive that are the lesson that I have learnt at the Bangalore hospital. This is a new thought process; just a single foot print in the sands of the time, to be followed by many more! A hope!

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Section V

Surgeon and Surgical Practice

It's what you do when you don't have to that determines what you will be when you can no longer help it.

John W. Pelley

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The Making of a Surgeon

Professor Tehemton E. Udwadia

When I was asked to write a chapter on "The Making of a Surgeon" I thought it was a sick joke to ask someone who after almost 50 years in surgery is still struggling to find his feet to become a surgeon. I sent back my absurd reply "Surgeons are born not made" which did not amuse the editors. I was given an extended deadline which I conveniently forgot to which I was sent a 'sweet' reminder. I just could not ignore. Hence this piece, trying to write with some semblance of authority on a subject so vast and varied in its implications, way beyond my capacity, the "Making of a Surgeon".

In today's world of "high-tech" surgery I feel there are three distinct components in the making of a surgeon.

1. Training
2. Technology
3. Temperament

Training:

When I was a House Surgeon in 1956 my registrar would stand and supervise how I tied knots on the bed post, and how secure and fast and fluent my movements were. He would clip a haemostat in the depth of an apron pocket for me to tie a ligature. He would emphasize that for any tissue approximation the four essentials – equal depth, equal distance, right angles to the cut surface and no tension were the basis of all suturing, that haemostasis meant occluding only the bleeder, no unnecessary tissue to be traumatized. Life was simple. Clinical training, diagnosis, management, prognosis was at the bed

side in keeping with the early edition of that masterpiece of Indian Surgical literature by Dr. A.K. Das.

The great advances and demands on training over the last five decades are a reflection of the great advances in surgery and the vastly increased demands on the cognitive and manual skills required of surgeons. There has been a total revolution in investigative procedures, tissue approximation, energy sources and the concept of minimal tissue trauma in surgery. Today's surgeon is submerged in such a plethora of ancillary disciplines that he would be completely at sea if he did not have a working knowledge of the advances which have grown with surgery and contributed to the growth of surgery, be it the diagnostic and therapeutic role of radiology, or endoscopy, just to name two areas of direct impact.

Minimal Access Surgery places special demands on surgical training – be it the basic pelvi-trainer, which in view of its simplicity, universal availability and capacity to improve eye-hand coordination by progressively complex maneuvers is not to be slighted, especially in the developing world. Virtual reality trainers are a more sophisticated (though not mandatory method) of training. The availability of "human tissue" feel of synthetic material adds to the training potential of these methods. Training on animals or cadavers whilst giving a more exact tissue feel is not easily available or necessary. This mastery in eye-hand coordination is translated into mastering of intra corporal suturing, stapling and use of continuously evolving energy sources.

However, any amount of training on boxes or animals would be totally incomplete and inadequate without the most important foundation of surgical education – the Halstedian teacher-trainee relationship which encompasses not merely training of the hand and eye but of the entire surgeon – his body, mind, heart. I see the trainee surgeon of today pay so much emphasis on mechanical training

methods and elation at improving his "score" as he practices harder that his mind is often shut to the fact that surgery is practiced not on boxes but on humans, and no two humans are ever alike. There is also a great deal to learn from a ward round or discussion on a diagnostic or management quandary, that the ultimate training experience is to try and imbibe the higher qualities of their Chief. The surgeon in training as also the practicing surgeon has free access to such a large volume of literature in several modalities of training as to make discussion on this matter redundant here.

Technology:

There can be no doubt that the giant surgical advances we see are largely the result of the enterprise and ingenuity of the surgical manufacturer. As technology advances it becomes more complex (and expensive) and the surgeon, if he is to benefit from it, must master its complexities for optimal use.

Having said this there are two thoughts I must share – The discerning surgeon must evaluate if a "technology advance" is more for the manufacturers profit than the patient's benefit. And to remember always the teaching of Sushrutha "the hand of the surgeon is the most important of all surgical instruments".

Temperament:

In today's age and time of computerized decision making, "evidence' based medicine, virtual reality, robots, fast surgery and quick bucks, is there an role for temperament in the making of a surgeon? While there is voluminous literature on the ever progressing world of surgical training and technology, there is rapidly dwindling writing on development of a surgeon's temperament, so much so that the trainee surgeon of today may not even be aware of such an entity in a surgeon as "temperament". Temperament as I see it is that part of surgery which goes beyond training and technology – it is the development of a surgeon's character. I do not know how one can

define or quantify temperament. It is an inner feeling, nebulous yet very much there. I can best write of temperament patchily by citing some qualities which give surgery its superior charm and character, as was taught, or rather transferred, to us by our Chiefs.

Empathy

When we were undergraduate students at the K.E.M. Hospital, Bombay (now Mumbai), we were designated as Surgical Dressers (as contrasted to Medical Clerks). I was dressing a patient with burns (an essential part of undergraduate training those days). The patient was in obvious pain but, I carried on relentlessly in a hurry to finish and go for cricket practice. I was unaware that my Chief Dr. R.H. Karmarkar was standing behind me. He tapped me and said "Udwadia, if you want to be a surgeon, you must learn to FEEL your patient's pain." This is one moment I have never forgotten. Without using the word he taught me the full meaning and impact of empathy – to be one with the patient as also the family in their pain and suffering. Empathy has many faces – lowering one's mask and holding the patient's hand in the operation room. to ensure the patient sees a familiar face and a reassuring touch as the patient goes under. An operation is as much a part of our daily activity as brushing our teeth, but to patients flat on their back looking up at masked strangers is a terrible ordeal as they slip into the unknown. As Sir Berkeley Moynihan wrote: *"For us an operation is an incident in the day's work, but for our patient it often is the sternest and most dreaded of all trials, for the mysteries of life and death surround it, and it is one trial which must be faced completely alone."*

After surgery, the patient waits in anticipation all day for the fleeting visit of the surgeon. This visit is the high point of their day. Any such visit if confined to palpating the abdomen, viewing reports and charts which does not bring cheer, a laugh or atleast a smile to the patient is a blot on surgeon-patient relationship. Unending empathy can never

be a put-on act – it has to come from within. Perhaps it is empathy which instills the most vital attribute of a surgeon – gentleness, gentleness in speech, action, surgery. As Henague Ogilvie wrote over 60 years back, "absence of scar tissue is the signature of the gentle surgeon".

Hubris

By instinct and temperament every surgeon is egoistic – he would not be a surgeon otherwise! Every one of us after a difficult procedure perfectly executed, as we remove our gloves, are feeling ten feet tall! This within reason is a healthy reward for our expertise.

Greek mythology tells of a young boy who made wings from feathers stuck together with wax. Ignoring the advice of his father not to fly too high lest the sun melt the wax, exhilarated by his success he flew higher and higher, the sun melted the wax on his wings and he plunged to his death. This tale has given the Greek language a unique word 'hubris' – unwarranted pride, conceit, arrogance. In a tertiary care Hospital we have observed that the commonest cause of CBD injury is not altered anatomy, gross pathology, instrument failure, but stark hubris.

Hubris comes very easily to each one of us surgeons. The only cure for a surgeon's hubris is to develop a surgeon's humility – awareness that a conversion or a gentle withdrawal is not a stigma to surgical skill nor a sign of failure. When appropriate, it is a manifestation of a surgeon's maturity and concern for patient safety. As Osler wrote in his classic Aequanimitas "you may reach the highest success, but your character still lacks that which can alone give permanence to power - the grace of Humility." Incidentally Osler also defined one other attribute for surgeons – equanimity, that is, to face success and failure with the same balance, to keep cool in adverse circumstances during and after surgery so that the patient and the family turn to the surgeon as a comforting rock when in distress.

Failure

The opposite end of the scale from hubris is failure. I failed in my M.S. examination. Professor S.S. Anand roared at me during my first short case and literally showed me the door. I was devastated for weeks. This failure was perhaps the best single episode in my life and career. It opened my eyes to the real world. I realized that failure, like hardship, was the best way of tempering the steel in one's soul. It gave me the wisdom and softness to accept failures in others with sympathy and understanding. But most of all this failure prepared me for my entire career as a surgeon. Every surgeon has failures all his life through. Every wound infected is a failure, every leak, be it biliary, intestinal, bronchial is a failure. And as with any failure the buck stops with the person who failed – the surgeon. No shelter in blaming the nurse, assistant, ward boy, light, anaesthetist, suture material or instrument. It taught me never to raise my voice as an examiner, and if the candidate deserves to fail, to maintain the dignity and composure of the candidate. It taught me the meaning of helping give strength and confidence to anyone who needed support. When invited to deliver the Dr. S.S. Anand Memorial Oration in Punjab, I publicly acknowledged the benefit I had received in my overall approach to life and surgery thanks to Dr. Anand and the M.S. Examination. Dr. Anand had also helped set a goal for me. He was one of India's earliest Hunterian Professors. Because of my failure, I decided I too would one day be a Hunterian Professor.

The Enquiring Mind:

I was fortunate that the motto of my alma mater the G.S. Medical College and K.E.M. Hospital, Mumbai, "you are here not to worship what you are taught but to question it," for as my chief Dr. Arthur deSa said, tongue in cheek, "of course I teach you only the truth, but for God's sake, never ever believe it!" When I just started my Residency at the K.E.M. Hospital in 1956, I read in the British Medical Journal, a

sentence that I have repeated to every batch of surgical students "Half of what you are taught by your teachers in Medical School will in ten years be shown to be wrong. The trouble is none of you teachers know which half".

The enquiring mind is a growing necessity in surgery today. With new instrumentation and new procedures being thrust on us with increasing frequency it is mandatory for each one to evaluate and scrutinize every such "advance", to separate the grain from the chaff, for an advance is progress not to something new but to something better.

Relationship with Colleagues and Juniors

As the profession gets more "dog-eat-dog" it is common to run down and denigrate ones colleagues, and pass harsh judgment on them. To any discerning observer, it is not the subject of scorn who loses dignity and respect, it is the speaker who belittles himself and is being judged. I learnt all my lessons from incredibly gifted surgeons and unique humans.

I had the great good fortune to be Dr. A.V. Baliga's assistant in his private nursing home between resident posts at KEM and Tata Memorial hospitals. The very first day I joined, he was performing a nephrectomy for a gigantic hypernephroma on the mother of a surgeon. Her son and a few other surgeons were in the operation room, but Dr. Baliga turned down their offer to assist as he had a "good new assistant". Everything went well till he was ligating the renal pedicle – when the haemostat slipped. Without a word he packed the cavity and kept it packed as he chatted with the patient's son. He did not even look my way. He removed the pack, with complete aplomb, caught the vessels and completed the operation as though this was the way a nephrectomy was routinely done. Neither by sign nor by word did he show the least displeasure with me. It was only as we were alone and scrubbing side by side for the next case that

he came close to me, stood on tiptoe (he was rather short) and whispered in my ear, "Udwadia, we must not make a habit of this!!" No surgeon could have ever received a better lesson in how a senior surgeon should maintain the dignity, self-esteem and confidence of his junior. This was also a lesson that the surgeon must quietly accept the onus for all eventualities even if the error was not his. And of course, it taught me that if you would have loyalty from your juniors, you must first demonstrate your loyalty to them. It was during the same stint with him that Dr. Baliga late one night during an unforgettable incident said, almost as though he was talking to himself, a sentence I feel should be written in every operation room, "the time for post-operative care is on the operation table".

The learning process:

I was in sequence undergraduate student, House surgeon, Registrar and Honorary Assistant Surgeon to Dr. Arthur DeSa. About five years before he passed away, we were both returning after an examination in Gulbarga. We got in the train at 10 O'clock at night. Being the younger, I took the upper berth and he the lower berth. As soon as he settled down, I took out a Readers Digest. After a few minutes I looked down to see if I could put off the light when I saw he was reading a book on Pancreatic Surgery. Out of respect I did nothing. On the upper berth the light was right in my eye and I could not sleep. After a long, long time I asked him if I could put off the light. He said to me, "Tehemton, you are still young. I am getting old and there is so much I still do not know, and so little time left for me to read". This to me was the ultimate lesson that the surgeon is a student his whole life through. The making of a surgeon never ends. That is why the title of this piece is very apt – the making of a Surgeon – making, making, making ad infinitum – the surgeon is never finally made – he learns till the day he hangs up his rubber gloves and like all good soldiers, gently fades away. The surgeon who convinces himself that he knows it all is a menace to his patients.

The most valuable learning medium for the learning process is the fierce crucible of mistakes and error. My long time colleague at the J.J. Hospital, Dr. R.A. Patel, used to teach all our Residents "there are three types of surgeons: 1) Those who learn from others' mistakes 2) those who learn from their own mistakes 3) those who don't."

Pride:

Pride is not to be confused with Hubris. A surgeon's pride is not in himself. A surgeon's pride is in his work. Pride is what makes a surgeon strive for perfection, be it in his history taking, diagnosis or his surgery. It is pride which in this age of skin stapling, makes a surgeon remove and reapply a skin suture if it not perfect – equal distance and depth, at right angles to the cut surface and approximation without tension. It is also pride which makes a teacher rejoice that every Registrar of his passed the M.S. at the first attempt – on merit. Or that every Registrar he worked with is doing bigger and better surgery than him. Pride in surgery is a positive force.

Reach Out:

I worked with Professor P.K. Sen more than I worked with any other Chief – as his Thoracic and General Surgery Registrar and in his Research team for nine years in his myocardial revascularisation and heart transplant projects. Professor Sen was an unique, multifaceted individual – surgeon, student, experimenter, artist, poet, musician, astronomer, pilot. Over the dozen years I spent with him, I learnt a great deal, but if asked what, I could not put a finger on any concrete point. But one thing he passed on to one and all, almost subconsciously, was his determination to reach for the stars. As he once quoted to me "Udwadia, they build too low who build below the stars".

Surgery is a team sport.

Gone are the days when the surgeon posed as a *prima donna*, superior

to all around him. Today the surgeon is just in cog, albeit an important cog, in the wheel of surgery. In smooth and successful patient care all involved in the investigation and post-operative treatment as also all in the Operation Theatre are equally important – the anesthetist, nurse, assistant, bio-medical technician, O.T. Orderly to name just a few. It is the surgeon's duty to extract utmost co-operation and involvement from each one. And like a good captain he must lead from the front – sharing his skill and ability, reassuring, encouraging and gentle, yet demanding the best for the patient.

The old adage says "Knowledge comes, wisdom lingers". Training and technology are the knowledge of surgery, temperament its wisdom. Lacking the wisdom to talk with any authority on the making of a surgeon, I would like to share two quotations I try and follow as my guiding stars:

1) The Chirurgen in his operation must observe six things:

First	-	he doesth it safely.
Second	-	he work with such speed as his arte wyll soffer.
Third	-	that he work jenteley.
Fourth	-	that he be free from deceyte.
Fifth	-	that he take no cure on hande for gaynes sake only.
Lastly	-	that he promyse no more than his arte can performe.

- Thomas Gale 1507

2) What can I wish for the youth who devote themselves to surgery?

First, GRADUALNESS – Never begin the Subsequent without mastering the preceding

Second, MODESTY – do not allow haughtiness to take you in possession

Third, PASSION – Be passionate in your work and your searchings

Ivan Pavlov – 1904

25

How Greener is Rural India Setting up of Private Practice in a Small Town

Dr. K.Dakshinamoorthy and Dr.S.Sivasubramaniyan .

Rural health is national wealth. Mahatma Gandhi said "India lives in her villages". Villages are the sources of food materials for India.

Selection of place

A surgeon, who wants to settle down in rural area, should have a firm mind to settle down there. It is better that you select a place after your marriage, in consultation with your wife. I have seen many surgeons change their place of work after marriage, wasting time and money. In a few cases, they have even broken their wedlock as well.

A small town with a population of not less than 1 Lac that can draw patients from a radius of 50 to 60 kms, is ideal for setting up practice.

Every village or a small town has its own merits and demerits or advantages and disadvantages. In all these places, you will have to forego your personal comforts, especially food, if you happen to be a bachelor. There is absolutely no chance for social activities and recreation. You will not find a good school for your children and you will have to spend quite a lot on their education by admitting them in residential schools. You will not get potable water, hygienic conditions or a clean environment. But your service to rural masses is more important than your personal comforts. Sai Baba says "Life is a challenge, face it; life is full of hurdles, jump over it; life is a burden, undertake it."

Definitely, there may be many doctors and even a surgeon already practicing in that area. You may be initially, unwelcome to them. But with a friendly approach and ethical practice, you can turn them round.

In rural practice, you should plan every thing step by step or stage after stage.

Relationship with patients

This is the fundamental principle to develop confidence in the rural mass. You will never meet failures in rural practice, once you develop good relationship with your patients. Treat the patient as a whole, irrespective of his ailments, whether medical, surgical or obstetrics and gynaecology. A villager comes to you with a hope and confidence that you will make him alright at any cost. Hence, you should be an expert in all branches of medicine and surgery; lest you will lose the battle of rural practice. Certainly, he will not like you to refer him from one specialist to another. You should lend you ears for a patient hearing and carryout careful examination. Cultivate the habit of enquiring about his family and spend a few seconds to laugh with him; this will expand your practice very quickly. He will soon become an ambassador or PRO for you and will bring you more patients.

Setting up practice

In the beginning, one should concentrate on developing the practice rather than building a nursing home. It is very difficult to pick up practice in a new area since other doctors practicing in the area may not co-operate. Of course, it is too easy to pick up practice, if your parents or parents in law own a nursing home in that particular locality. If you need an identity, you should stand on your own legs.

We would suggest that you start your own practice from scratch. In other words, you should start an out-patient clinic in a rented building. You should not hesitate to start your practice as a general

practitioner. It is mandatory that you do mundane things like give injections and tablets and collect your fees for the same. You should never give up general practice during rural practice since it attracts crowd and it is the foundation on which you build your surgical future. You should never charge a large consultation fee in rural practice; this may upset your patients.

Once you stabilize your general out patient practice, you can very well plan for inpatient service. It is my experience and suggestion that you start in patient service also in a rented building initially. It is also wise to start with 10 beds only and try to learn and analyze the hospital administration. Please watch the occupancy rate carefully. If you are able to maintain the occupancy rate at 80%; then it is time for you to plan for your expansion.

The first step in expansion is the purchase of land just adjacent to the busy area of the small town. Please do not select the land out side the limits of the town. It should be easily reachable at any time of the day and night. One may require at least 10000 square feet of the land for a 50 bed hospital. You should purchase this land out of your own savings.

Before, you lay the foundation, please think twice whether the hospital will be viable or not. You must ascertain from the people whether they have accepted you as a doctor / surgeon. It is better you ask yourself whether you can survive in the rural area through out your life. To build a hospital block, you can avail loan facilities from a bank by mortgaging the land. This loan money can be repaid by equal monthly installments over a long period. Nowadays many banks are offering professional loans especially to doctors. You will have to decide how you want to build your inpatient service. The readily available way is to build your hospital on your own. The other easy and perhaps, a better way is to join hands with other leading practitioners of the town belonging to different specialties; this will provide you a tension free life.

Group Practice:

Group practice is safe and more advantageous than a single man practice. In our experience group practice is more purposeful and useful when the business of the hospital runs steadily; the growth of the hospital is progressing well. It is very difficult to be absent from the hospital, if you are in solo practice. Being absent for significant periods of time will lead to loss of business and revenue. In group practice, even in the absence of one doctor, the service can be managed by the other available doctors. Also, we can always share the experience, gain, loss and the responsibilities of the hospital in a group practice.

If, you are a surgeon, the best partner for you is a doctor with a degree in obstetrics and gynecology. Obstetric practice is always in demand and an Obstetrician can expect to be quite busy in a rural setup

The next specialty to add is paediatrics. We are yet to see parents who are not agitated and agonized when their children are diseased. No parent wants to see their children suffer from pain or disease. Paediatrics forms a large part of rural / general practice.

Now, you can boldly include a physician in your group. Not only, he will bring more cases to the hospital, but also he will take care of the post operative medical complications, which will in turn prolong the hospitalization. If you have an anaesthetist on permanent basis in your team, he will give you the moral support in operation theatre. His presence helps you to take care of poisoning, accident and emergency cases requiring ventilatory support.

These are the four specialists essential for a rural practice. All others like Orthopedics, ENT and Ophthalmology can be optional and may be invited on weekly basis; this will provide wider range of services under a single roof.

Pharmacy:

When you think that you have established your out patient practice, I

would suggest that you start a pharmacy in your clinic itself, even before you start your inpatient service. It is a very important income generating establishment for the hospital. Please do not lease it out, since it will give you a good financial support to build your own hospital in due course of time.

To start a pharmacy, you need not have any seed money. Every Pharma dealer gives you two months credit to repay their bills. You can encash on this facility and you can boldly start a Pharmacy by employing only one pharmacist.

Investigation facility:

If your outpatient record shows more than 50 patients, you definitely require a small clinical laboratory with one laboratory technician to assist in the diagnosis of common ailments. Initially all the tests can be done manually by using a colorimeter and a microscope. This can be expanded slowly depending upon the depth of your practice. The costly equipment like analyzer and other gadgets can be procured by bank loans. Whatever money you invest in laboratory can be regained within a year.

When you start a hospital for inpatient service, an x-ray machine and electro cardiogram will be of useful and helpful in arriving at a quick diagnosis instead of referring the patient to any other center. You must have these facilities to give the message to the public that you are capable of giving comprehensive care.

A rural doctor should undergo training in ultrasonography and gastroscopy; this will help him to diagnosis many diseases. This skill will be very useful when he expands the scope of his work and buys these equipment.

A CT scan or MRI has absolutely no place in small rural areas.

Who is a rural surgeon?

A rural surgeon is a need based multi specialty doctor working in a remote corner of the country, with limited facilities and resources and

without paramedical support. At the same time, he should offer surgery at an affordable cost to the patient without compromising the quality of care. Further, he should think that surgery is a service to god.

No doubt, he does more number of surgeries and also wide range of multi specialty surgeries than his urban colleague, as there is no dearth of cases in rural areas. This we term it as "professional satisfaction". On the other hand, he has to diagnose and operate his cases by his own clinical acumen and knowledge as there is no other surgeon available nearby for help or assistance. This I term it as "professional isolation".

Qualities of a rural surgeon

A rural surgeon should have self-confidence that he will shine well in a rural set up despite all the teething problems. He must develop tolerance, as he has to cross all sorts of hurdles and face many challenges, unquestioningly, one by one. He should be competent. He should also develop management skills by supervising all patients and day-to-day administration of his hospital. He should cultivate self confidence

Paramedicals

It is very difficult to attract the paramedics to rural areas. It is easier to get the doctors to rural areas. Invariably, they demand a high salary. As of now very limited number of paramedics is trained because number of training institutions is also fewer compared to medical and dental colleges. Although now, many training institutions have been established in private sector still there is shortage because large number of private and corporate hospitals established in the urban areas are ready to employ them. .One must seriously think about training local people in these skills and get them proper certification; to some extent this helps in retaining them locally.

Advantages

There are, definitely, certain advantages in rural practice. You will

feel proud in taking the benefits of the surgery to the grass root level of the population. You will become popular and you will command respect from the entire rural population. The rural practice will pave way for a simple and happy life by cultivating patience and tolerance. It will give professional satisfaction too.

Blood Bank:

It is very difficult to get blood for emergency cases from authorized blood banks. They are far away and many times condition of the patient detoriates before the arrival of blood. How to make blood easily available needs serious thought by the authorities as well as the profession.

Conferences and CMEs

A rural surgeon generally may not find time to read regular professional magazines as he is too busy, day and night, attending to patients. Hence it is necessary that he attend as many professional conferences and CMEs as he can to sharpen his knowledge and to develop new skills.

How to promote surgeons to settle down in rural areas

Government should adopt an alternative policy to attract surgeons to rural India. Incentive may be provided to attract surgeons to rural areas in many ways. For instance, extra allowance may be paid during postgraduate study period. When a Surgeon establishes practice in small town tax and other concessions or benefits may be given.

How greener is rural India?

We are of the opinion that India has not become green at all in the field of health, even after sixty years of independence. Unless "National Rural Health mission" is implemented properly, it will be very difficult for India to become green even by 2020. We have a long way to go. But it must be remembered that keeping service before self has its own deep rewards. We would strongly encourage young surgeons to come and practice in rural India.

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When Should a Surgeon Retire?

Dr. K.S. Shekar

The above question perpetually haunted me. As I reached the age of 70 years, the search for an answer became more and more intense. But the answer became more elusive. Generally, most of the surgeons do speak about retirement, but no one wants to hang up their boots and say that he is not coming to work from the next day. When I said 'I want to retire', there was always a counter question, "why do you want to retire?" "Retire and do what?" "Too young to retire!" Still one has to unglove his hands and lay down the scalpel one day or the other. But when?

You can take some of the examples among our cricketers. One of our former captains went around hoping that he will be called to participate in IPL matches. But everyone kept away from him. He must be thinking, "What wrong have I done?" It is a sad state when one is made to feel that his services are no more needed. You stand in front of your consultation room, hoping someone will walk in. but no one appears. As you grow older, new generation takes over. Patients themselves loose faith in your capacity to perform surgeries that may last few hours. They want a young and energetic surgeon to perform their surgery.

A surgeon ought to have a receeding forehead, few grey hair over the temples, small paunch, energetic gait and jovial outlook. Such a person is bound to make an impression. It is easy to impress a patient when you are young. But as you grow old, your eyesight becomes dim, the hearing is compromised, your memory becomes weak, your

gait falters and you are not steady on your feet. But your heart is not ready to accept your frailty and you want to continue to operate.

But why? It is because you are not ready to accept that you have grown old or is it the greed that keeps you walking into the operation theatre?

Sunil Gavaskar retired at the height of his career. Everyone asked him why he was retiring. His answer was "I would like to retire now when everyone is questioning why I should retire; I certainly do not like to retire when everyone asks why have I not retired yet!" Adam Gilchrist, the renowned Australian wicket keeper announced his retirement after dropping an easy catch. He said "I had no business to drop that catch; it is not that I dropped a catch, but I dropped the cup itself!"

That is the commitment. "Old order changeth yielding place to new "(Grey's Elegy) is the universal truth and surgeons cannot be exceptions.

"I want to die with my boots on "is a nice phrase to say. Then you have to die young. I have known at least three instances where surgeons have collapsed and died while operating. Imagine the chaos that such a calamity would entail.

When I finally decided to retire, I decided to trick myself out of the situation. If it is the money that is going to keep me operating, then I should divest myself of all the professional income. So for twelve long months all the money that I earned was held back in the hospital account. My need for money gradually decreased along with a desire to earn. Money finally went for a charity work. At the end of twelve months, I could announce my retirement..

It works!

One of my senior surgeons when I asked "do you still operate", he replied that he is a ghost surgeon, implying that he is around when his

junior colleague operates in his name. I had heard of the story of a famous Obstetrician of yester years, who always sat fully gowned and gloved, with cap and mask in the ante – room of his labour – room. His assistants delivered the babies and handed over the new-borns to the surgeon, who later displayed the trophy to the anxiously waiting relatives outside the labour room. High society people want the old man to conduct the surgery or deliver their infants. I try to convince my patients that it is my colleague who will operate. But often they insist that they will come only if I agree to operate. I cannot make my hospital loose a patient and my colleague to loose some income. So I had to act the role of a 'ghost surgeon' on one or two occasions. My name will not be in the operation room chart, nor there will be any payment. But I have also come across some high profile surgeons, who insist on their names being put on all cases operated in his / her hospital and claim payment. This is total fraud!.

Today, more and more qualified doctors and surgeons come out of medical colleges. Most of them may not find suitable jobs. It is worthwhile to adopt one or two junior surgeons and train them further in craft and art of surgery. This is where the experience of the old and knowledge of the young can compliment each other and work for the benefit of the patient. Every surgical post-graduate who comes out of a medical college requires a minimum of five years of apprenticeship. Best gift is the gift of knowledge and skill. Pass it on.

After considerable thought, I have dared to list few of the indicators for assessing oneself when he / she should retire.

1. When your patient develops unusual complications after an ordinary surgery.

You can claim that you have done hundreds of similar cases earlier successfully. Similar case, similar operation, you have endless complications. It is time for you to sit back and look for loopholes.

Most of the time surgery is a conditional reflex. It is like driving your

car. When you drive along, you do not think and act – your hands hold the steering wheel and your foot accelerate the vehicle. All along, without your active knowledge, you shift gears, apply brake to the vehicle, turn along the curves, avoid pedestrians and animals on the road, prevent accidents and before you know you will reach your destination. Similarly, a surgeon who has operated on many cases does an operation proficiently. His incisions, excisions, dissections, etc., are absolutely precise. This he will do while talking irrelevant things and joking. An onlooker feels amazed at the skill of the surgeon.

Then why complications?

Presence of visual defects and lack of depth perception may be the causes.

Failure to appreciate changed physiology and anatomy in the patient due to disease process or earlier surgical interventions if a surgeon creates a urethral fistula during a circumcision, it is due to lack of depth perception. One cuts deeper than required; or the eyes failed to appreciate and fingers did not feel the tissues around the urethra which is different from skin and mucosa of prepuce.

When one does a trochar cystotomy if it passes beyond the bladder, it must be due to sheer arrogance of the surgeon or lack of appreciation by him of changed anatomy from earlier operations on the bladder.

Whenever there are unusual complications when there should not be any, it is time for contemplation and self assessment. Often the surgeon takes a defensive attitude and will say that he has done everything correctly and still something has gone wrong. A conscientious surgeon ought to know and anticipate unusual developments during and after a surgical procedure. Medical results are based on law of averages. When every human being is different and distinct, the law of averages cannot be applied. The same procedure in similar looking patients cannot yield similar result. But

when you get a urethral fistula post circumcision, it is time to lay down the scalpel.

2. As we grow old, everyone develops tremor of the hand. Some may develop even Parkinson's disease. That is the extreme limit. General indications are that you spill your coffee into the saucer or on to yourself; when you cannot tie your shoe lace yourself. If a doctor does not have a steady hand, surgery is not the specialty for him.

3. When you are not steady on your feet: This is more a general term. When a man starts using a walking stick to help him to steady himself while walking he is definitely old. There is no place for a doctor with a walking stick inside a hospital. When a surgeon wants to sit down repeatedly during surgery indicates that he is old and cannot stand the rigors of surgical work. A surgeon who has to be assisted out of his chair wants to be massaged after a surgery or goes and lies down after an operation is not a fit person to hold a knife.

4. Uncontrolled diabetes with spells of hypoglycemic attacks,

5. Anginal attacks.

6. Losing temper frequently in the operation theatre.

As such I firmly believe that there is no place for a surgeon who loses his cool and shouts around inside an operation theatre, whatever be the provocation. Tantrums by a surgeon inside and operation room are the legacy of the yesteryears, better forgotten as early as possible.

An angry surgeon inside an operation room is indirectly angry with himself because he is not standing on a firm ground, not knowing what exactly he should do.

Every medical professional, especially the surgeons, need to be assessed periodically by his colleagues, subordinates, even nurses and ward boys and patients about his clinical competence and interpersonal relations. His promotion and even renewal of contract

should be based on such an assessment. This will improve the quality of physicians and surgeons that we have and better care for the patients.

Conclusion

When in doubt, we should always go back to our roots. What do our scriptures say? When children come of age and are competent to govern, the King hands over the reign of the land to his eldest son and retires into the forest. The state of '*vanaprastashrama*' is prescribed not only to the kings but to all so that during your last stages of life one retires into forest to spend time in meditation, contemplation and prayers. Divested of all wants, they lead a life of austerity. With a tranquil mind, in a serene atmosphere they spend their last days. With the name of their God on their lips and heart they end their journey through this earth.

Is it not a fantastic end to a beautiful life on this earth?

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Section VI

The Doctor India Needs

"Call it by whatever name, the need is for a new breed of physician, who has a broad understanding of human biology, who is imbued with the ingredients of rural and peri-urban societies and their way of life, who can communicate effectively with the patient's family, who can address himself to preventive aspects in the homes, who will be an effective leader of health workers, and who will use his knowledge to stimulate other community building programmes. We need in effect a social biologist."

V. Ramalingaswamy, 1968

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Doctor India Needs

Prof. Gouri Pada Dutta

Prologue

Does one need a doctor?

A deep introspection will put a big asking mark to this quarry. No living being in this world need a specialized person to treat their ailment except man and his domesticated living animals including all varieties of vegetation. Primitive man had no doctor. In ancient period every person had to devise remedies from his own experiences, observations and experiments of the behaviour of other animal. Diseased persons used to cluster around in a specified place or on the way side in prehistoric period. Their neighbours and passersby used to suggest one or other form of treatment. Every person was conversant about some form of treatment. This practice is still in vogue amongst the tribal community. However, there are some persons (both male and female) who specialize in the art (magic) of healing and ultimately become professional in those communities.

This important service to individual and community was and is still regarded as a unique combination of dominance, financial benefit and spirit of altruism. With the progress of human knowledge the situation has become complex and problematic.

Introduction

Health care, preventive, curative and rehabilitative is the account of human efforts to deal with disease, decay and death from the primitive period. The present complex array of specialists and therapeutic procedures has almost mystified this essential service.

Every living species is born with its death sentence. Indian sages proclaimed ***'Jatasya hi dhruvo mrityu'***. Yet every one needs help to get relief from the malady of disease and ill health. Primitive and prehistoric medicine is unwritten and difficult to reconstruct. At first death and disease was regarded by human beings as natural phenomenon. Common ailments were considered as a component part of life. Serious and debilitating diseases were construed to be of super natural origin, the deed of malevolent forces or an offended god. The treatment was to lure the errant soul back to its proper habitat or to extract the evil intruder by various means. Consequently magic and religion played a large part in the healing procedure. Healers used to create a conclave with the rulers and priests. The driving force was to keep the community active and productive, as well as under their control.

A surprisingly, contemporary development of healing art and science was noted in Egypt, Middle East (Babylon, Mesopotamia) India and China around five thousand years ago i.e about 3000 years before birth of Christ. India is one of the foremost countries which institutionalized medicine releasing it out from magico-religious ambiguity and codified it.

The concept was holistic and comprehensive. In Vedic period healing art/science was known as Ayurveda. 'Ayu' means life, Veda means knowledge. The approach was multifactorial need based and community oriented. With all its limitations it was enough to meet the demand of the people who could afford to ask for it.

Division of Health care

With stratification of society and institutionalization of medicine division of health care was noted. From ancient time even in the present period health care delivery is divided into two major groups.

a. Codified is institutionalized medicine. These are governed by councils, universities, colleges and schools of different categories

and infrastructures. The practitioners obtain degrees and permitted to practice it.

b. Non-codified is non-institutionalized medicine. These are transmitted from person to person. They have their own system, unwritten but practiced by virtue of apprenticeship from the preceptor. These are home remedies, folk medicines, tribal medicines. These systems used to keep a link with the codified medicines. Each used to assimilate resources from each other. Another system of healing art is prevailing through secret practices of a group of religious persons (Saints, Fakirs, Darbesh & Bauls). There mode of treatment is confined to the believers of their creed only. They use it for propagation of their cult and creed. It is difficult to assess their credibility though they are in use by a large numbers of people.

In this context it may be mentioned that codified medicines also have unqualified and untrained practitioners, called quacks. Their main sustenance comes from non-availability of qualified healers of codified medicine. Poverty and ignorance of the indigent segment of the populations forces them to depend upon these practitioners.

All these forms of health care may be termed as medicare and can still be witnessed all over the world. They are especially prevalent in the developing countries. Health care which covers all aspects of life is provided through various community practices as well as social, culture and religious doctrines. These are specially noted amongst tribals and poorer people. Medicare provides treatment only when the patient is ill. This dominant attitude of treatment gives less importance to the preventive aspects of treatment.

Indian situation

Health care of this land metamorphosed with the development of human society. In India evidence of health and medicare can be noted in pre-Vedic situation. Some evidences are unearthed now in the

urbanized northwest part of undivided India i.e Harappa, Mohanjodaro, Lothal etc. These places must have a large hinter land which still remains unlocated. Little is known about the health care system of the southern part of this continent. Whether Siddha is a contemporary analogous system of Ayurveda or originated in that region before Aryans' interaction and who preceded who is debated.

It may be assumed that Siddha, Ayurveda and later on Unani (Greek/Arabian) medicine, when codified, became inaccessible to the unserved and underserved population. Even now these sections of people have to depend upon their own health culture and non-codified system of medicine.

Conceptual crisis

Conceptual shift in the health care started with the establishment of British colonial rule in India.

India has been invaded and occupied by various ethnic groups in different periods of history. Invaders either plundered this land and went back to their own country or settled here to become an integrated part of this great continent. The cultural mix was synergistic. The major mode of trade between different countries in the pre-colonial era was barter, a system of exchange of goods and different materials produced by them. Religious exchange along with other aspects of knowledge was associated with this economic transaction. Watershed of a new transformation of the situation began with the industrial revolution in Europe. The huge production of marketable commodities needed procurement of raw materials. This resulted in the need of colony. For effective implementation of this requirement, this process was followed by colonization of the intellect of their subordinates. This was evident in the sphere of education, health care and administration.

The ancient system of education and medicine practiced in the colony was replaced by the rulers. The western system of health care, which

is intrinsically different from the prevailing system of colonies, was imposed on them. Western medicine is philosophically unifactorial and mainly commercial. The present dominant system of health care was imposed on us by our previous rulers. This is eulogized by our elitist groups and administrative echelons. In reality only a minor section of privileged and quasi privileged person can avail it.

Stratification of Doctors

The conceptual change of the situation has created major stratification of healers. At present doctors may be broadly classified as doctors of codified medicine and those of non-codified medicine. The different forms of codified medicine and the number of doctors in practice are presented in Table. 1.

Table–1: Number of doctors in different codified systems of Medicine in India

System	Number
Ayurveda	4,63,661
Unani	46,558
Siddha	6,381
Naturopathy	881
Homeopathy	2,17,850
Sub total of AYUSH	**7,25,338**
Allopathic	6,96,747
Dental	72,497
Grand total	**14,94,582**

Source: National Health Profile 2007 (Central Bureau of Health Intelligence, Govt. of India, New Delhi)

The figures indicate a considerable number of doctors are practicing codified medicine in India. A large number of non-codified medicine as mentioned before are providing medicare to the people. However, neither the number of non-codified medical practitioners nor number of non-qualified practitioners of codified medicine is available.

Number of Para medical personnel in India is presented in Table 2.

Table 2: Type and number of Para-medical persons

Type of paramedical personnel	Number
Auxiliary Nurse cum Midwife (ANM)	5,27,482
General Nurse cum Midwife (GNM)	9,30,520
Lady Health Visitors (LHV)	61,186
Pharmacist	6,81,692
Total	22,00,880

Source: National Health Profile 2007 (Central Bureau of Health Intelligence, Govt. of India)

To assess the type of doctors that India needs one has to face some other facts besides the picture presented above. We should be taken into account the type of health care needed.

Type of Health care needed

The health care needed is considered as follows.

a. Primary health care

India is a signatory to the Alma Ata Declaration (1978) to provide health for all through Primary Health Care. Primary health care envisages: *provision of essential health care made universally accessible to individuals, families in the community by means acceptable to them, through their full participation and at accost that community and country can afford. Note it forms an integral part both of country's health system of which it is the nucleus and of the overall social and economic development of the community.* Primary health care addresses the main health problems in the community providing promotive, preventive, curative and rehabilitative services accordingly. Primary health care mostly depends on many social determinants e.g. Nutrition, Environment, Education, Economic status of the incumbents. The essential care should include at least: promotion of proper nutrition and adequate supply of safe water; basic sanitation; maternal and child health care, including family

planning; immunization against major infectious disease; prevention and control of locally endemic diseases; education concerning prevailing local health problems and methods of preventing and controlling them and appropriate treatment of common diseases and injuries. Our doctors as well those who are pursuing medical and allied health profession courses should be given this orientation so that they are able to strengthen and support primary health care. The responsibilities of doctors are increased since the doctors not only have to apply technical skills to solve the health problems determined by the social needs but also guide, teach, supervise health workers. The doctors are given social and educational function in addition to their technical functions, and if they accept this challenge they would become leaders in health.

b. *Secondary Health Care*

Notwithstanding the optimization of social justice to the vulnerable section, people will be sick and will suffer from disease. Here the health personnel have to play an important role. For treatment of complex and serious cases specialized persons and arrangements are needed. This should be provided in the secondary care units.

c. Tertiary and Super specialty care

Tertiary care is needed for severely complicated diseases Unifactorial approach intends to separate the person from its socio-economic situation; disease from the body economy and chase the immediate cause of the disease. Phenomenal advancement of science has improved our diagnostic and therapeutic abilities. This care is principally based on sophisticated investigations and therapeutic measures. Tertiary care is needed but one should try to prevent its misuse.

To assess the need of doctors who can serve our people, it is imperative to have a look at the existing infrastructure of healthcare delivery. There should be a thorough knowledge about (a) medical education (b) service infrastructure.

The infrastructure available is presented in the following tables.

Table 3. Number of Medical, Dental, Nursing and Pharmacy Colleges and Annual Admissions

	Institutions	Annual admission
Medical Colleges* MBBS Course	314	45,403 (2009-10)
Dental College** BDS course	293	23650 (2010-11)
Nursing Colleges*** General Nurse Midwife course	1597	59138
Pharmacy Colleges*** B Pharma course	461	27735

Source: *Medical Council of India, New Delhi, 2010

** Ministry of Health, Government of India, New Delhi, 2010
National Health Profile 2007 (Central Bureau of Health Intelligence, Govt. of India)

Health care service delivery sector is analyzed and presented in the Table 4.

Table4. Distribution of hospitals and beds in rural and urban areas

Area	Number of hospitals	Number of beds
Rural	6955	1,54,031
Urban	3021	3,28,491
Total	9976	4,82,522

Source: National Health Profile 2007 (Central Bureau of Health Intelligence, Govt. of India)

Table 5. Number of Community Health Centres, Primary Health Centres, and Subcentres

Type	Number
Sub-centres	1,44,988
Primary health centres (PHC)	22,669
Community health centres (CHC)	3910

Source: National Health Profile 2007 (Central Bureau of Health Intelligence, Govt. of India)

These tables show that the infrastructure is quite extensive and should be able to provide proper healthcare for the people.

This is further supplemented by a number of institutions of Indian System of Medicine & Homeopathy (AYUSH). This is presented in the following.

Table 6. Distribution of number of AYUSH hospitals and dispensaries

	Hospitals	Dispensaries
State	2196	12665
Local Bodies	14	1006
Others	163	12
Total	**2373**	**13683**

Source: Health Profile of India, 2007 (Website)

The following table provides an analysis of various categories of health personnel required, in position, sanctioned and vacancies in India.

Table 7. Health human resource required and in position in rural areas in Government establishments in India

Type of functionaries	Required [R]	In position [P]	Shortfall (R-P)	Sanctioned (S)	Vacant (S-P)
PHC doctor	22842	25724	2310	29689	396S
Total specialists	12172	4124	7459	6617	2493
Pediatrics	3043	440	2030	1019	578
Physician	3043	704	1799	1305	601
Obstetrician /gynecologist	3043	780	1699	1498	718
Surgeon	3043	781	1698	1518	737
Block extension educator		5708		6743	1053
HA (male)	22842	19927	5452	23569	3642
HA/LHV (female)	22842	19855	3889	23032	3257
MPW (male)	137311	71053	66902	84750	13697
Pharmacist	25885	21118	6678	22972	2469
Lab Technician	25885	13262	12661	15544	2368
ANM / MPW (female)	160153	137407	24382	148151	10765
Nurse Midwife	44143	27336	20842	32723	5495

Source: The India Economy Review, 2008. (Volume V ; Annual Issue : 29th February 2008) "Status of Health Services in India: An Overview" by Dr. Imrana Qadeer at Page 58.

The following Table provides the doctor population ratio along with nurse population ratio in India.

Table 8. Doctor and Nurses per 100,000 population

Doctors	54.27
Nurses	75.89

Source: National Health Profile 2007 (Central Bureau of Health Intelligence, Govt. of India)

Medical Education & Trainning

Medical Education and Training of medical and paramedical personnel are being shaped to fulfill requirements of privileged section. Proliferation of five star hospitals and high-tech investigative centres are situated to fulfill this demand. This has led medical personnel to opt for specialist and super specialist education and training. In reality a limited number of aspirants will be able to avail this privilege. But aspirants are numerous. Everybody believes that they can achieve it; that their inability to get the position is not their fault but other factors are responsible for this deprivation. One can surmise that most of our people are suffering from a shock syndrome i.e. disparity between their ambition and capacity to attain it. In medical parley shock syndrome is defined as the disparity between the circulating blood volume and vascular bed of the body. This is creating a perceptible problem in the medicare of our country.

Crisis in Medicare

This background is further complicated by the non-availability of morbidity profile of our population. In India true morbidity profile can only be registered by participatory neighbourhood survey of disease. The profile of illness is now obtained from the treatment centres in most perfunctory manner. This provides the disease burden of the people who can reach the treatment centre of codified medicine. The percentage of people as revealed by micro survey is around 30% who only get treatment from codified medical centres.

Unless the planners have composite idea of morbidity profile especially of the unserved and underserved population, doctors and health personnel will never be able to meet their actual need. (Survey conducted by author in Indus Panchayat Samity in Bankura district of West Bengal in 2000 A.D.)

Service Infrastructure

It has already been presented that India has an enormous health service infrastructure both in terms of units and personnel. The malady lies in the distribution of the resources and ignorance of the people and also of the health personnel about their proper functioning. These also suffer from inadequate supervision and proper maintenance.

The beds and treatment centres (Sub-centre, PHC & CHC) are not being effectively utilized. CHCs (i.e. Community Health Centres) are not functioning as the First Referral Units (FRU). The FRU is at the sub-division or district hospitals.

With this back ground one should produce the Doctor India Needs

In 1949 Mao Tse Tung stated that before introduction of Western Medicine, China had its own system of health care. He observed that all health personnel should thoroughly study the indigenous/traditional system of health care of China. They should try to evaluate and practice the relevant part of this system and then only they can gainfully utilize their knowledge of western system of medicine. China started developing their various methods of traditional medicare. World became acquainted with the importance of Acupuncture. China did its best to establish their traditional system and western medicine with same importance.

India too has traditional system of medicine akin to that of China, both in conceptual and implemental modality. India should utilize the knowledge of its traditional system of health care.

The extensive infrastructure of AYUSH that exists has already been presented above. Unfortunately these are not considered as a complete system but complimentary and supplementary to western medicine. This is an important handicap for their proper development.

Every system has its plus and minus points. Western medicine is not sacrosanct. It has its deficiency and limitation also.

A book 'Reviving American dreams' states, although fifteen percent of the GDP is spent on health in USA about fifty million Americans do not get treatment. The Health Care in most of the developed countries is prepaid through one or other form of insurance. In USA per capita health expenditure is around seven thousand dollars. Although insured, around forty millions Americans get apology of treatment (Konsumer, Penag: quoted from journal of American Association). The tragedy is overwhelming. Report published by American Institute of Medicine has documented a distressingly high role of medical errors in hospitals which may cause as may as 98,600 deaths a year (The Economist July 17, 2004). These facts force us to look towards the Indigenous System of health care.

The Indigenous system of health care has its positive parts and limitations. These systems failed to grow due to bigotry and prejudices of the practitioners of such medicine and neglect rather hate of British officials and their henchmen. The elite Indians created by Macaulay doctrine were all out to ostracize these systems.

Reorientation of Medical Education is needed

The medical colleges of Western Medicine are situated in the tertiary care hospitals. The education is specialist oriented, information imparting and not problem resolving. The institutes have little interaction with the community and it is not need based because it is not community oriented. There is no interaction between the prevailing indigenous systems those are in vogue in India. These interactions of AYUSH with Western medicine can produce an ideal

health care deliverable to the people. The course and curriculum should include health culture of the people. We should also initiate a respectful research about non-codified medicine through **evidential** and **clinical** evaluation. The relevant portion of the therapy may be included in the teaching. Clinical and evidential evaluation means the community will endorse the modality of treatment and the efficacy of medicine not by laboratory procedure but by actual relief of the sufferer.

Situation Demands

We should produce doctors and health personnel who can optimally satisfy the need of the community. A reorientation of medical education (both Western & AYUSH is urgently needed. This orientation should be need based, community oriented and problem resolving dependent on maximum use of appropriate technology.

No one can deny the need and benefit of phenomenal advancement of science. This knowledge has to be rationally implemented.

For reorientation of each system of medical education the following points should be considered:

a. Assessment of morbidity profile of the people for prioritization of planning.

b. Transparency of the location and function of the health care delivery units (both in the public and private sectors) along with the easy accessibility of the poor people to these centres.

c. Interaction and integration of the different system of medicare at the basic level of training and in the teaching centres.

d. This can be effectively done if the teaching of all the codified systems is started from the community level i.e. in the CHC at the block or Panchayat Samity level. Where the teachers and students will be able to interact with the community and assimilate the health culture and practices.

e. The teaching will be integrated one with clinical perspective and basic sciences. Then in phases the education will be upgraded from Block (Panchayat Samity) to district and Medical Colleges without compromising the quality of the medical practitioners.

f. The efficacy of AYUSH should be evaluated clinically and incorporated in the syllabus of Western medicine.

g. The efficacy and rationality of the non-codified medicine also have to be evaluated by evidential evaluation by the community and be incorporated in the curriculum.

Conclusion

To produce/develop a doctor who will be able to serve the need of multi- ethnic population of this country is a monumental task. In this presentation an attempt has been made to point out those different categories of healers who practice medicare for the people. The situation is complex and is more complicated due to neo-liberal health care policy and globalization. For obvious reason Western system has occupied a prime position for health care in India. Integration with other systems is also necessary. There has to be a beginning of the beginning. Socially conscious activists have to initiate this process, the process of producing socially oriented doctors. This should be done if a real solution has to be found for providing the much needed health care to the people. Especially to the mute millions who are so long unserved or underserved. There are various *pathys* for health care but the sick population needs sympathy from the health care deliverer.

India needs a doctor with human values along with proper technical knowledge with its application dexterity. An integration of western medicine with the philosophy and rational part of ancient medicine can provide a solution.

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The 'Social Physician' of India: Reflections on an increasing elusive goal

Dr. Ravi Narayan

The challenging goal of Medical Education in India, since Independence has been what the Bhore Committee of 1946 described as the 'Social Physician.' This was particularly relevant because since independence, the country had embarked on strengthening primary health care in the rural and disadvantaged areas and extending basic medical care beyond the urban focus of pre- independence medical care. For this urgent task, an army of 'social physicians' was needed

'The Social Physician'

"The physicians of tomorrow ... will be scientist and social worker; ready to cooperate in team work; in close touch with the people he disinterestedly serves; a friend and leader he directs all his efforts towards the prevention of disease and becomes a therapist where prevention has broken down; the social physician, protecting the people and guiding them to a healthier and happier life...."

- Bhore Committee – 1946

This goal was repeated in a series of expert reports using slightly different terminologies including the **general practitioner** (Mudaliar report 1961); the **basic doctor** (Patel report 1970); the **family /community doctor with social responsibility** (Srivastava report 1975); the **community oriented physician** for comprehensive health care (ICSSR- ICMR Health for All report 1981) and the **community physician** (National Education Policy for Health

Science 1989). However in spite of various recommendations and even some curriculum changes towards this goal over six decades, this goal has remained elusive. Less and less doctors want to be general practitioners or family and community oriented physicians at community level and even fewer wish to be medical officers of primary health centers in rural areas. More and more wish to be specialist physicians in secondary and tertiary care medical centers in urban areas.

All these efforts at reorienting medical education have now been reduced to encouraging or requiring through government legislation, young graduates of medical colleges to work atleast in rural areas for one or two years before post graduation and career advancement. The strong opposition by the junior doctors even to this minimum community obligation in recent years all over the country is the strongest sign of the failure of our system towards this national need and elusive goal. **Why is this so?**

I have been a long time researcher in community oriented medical education since 1974 and have also been a learning facilitator of curriculum innovations during my teaching career. We experimented with many initiatives including - rural orientation camps; ethics and epidemiology training; integration efforts and problem based learning; experiments with interactive participatory and experiential learning; promoting medical student involvement in disaster responses, national health programmes and community health initiatives; and community based internship beyond the teaching hospital. In the 1990's, I also participated with a radical national group of health professionals, medical students and activists called the medico friend circle, in evolving an **alternative curriculum** to the existing one prescribed by the Medical Council of India, with the hope that it would change the trend and encourage students to recognize the challenge and discover a passion for community health. As a health policy researcher and health activist, I have also been

tracking the larger economic, political and social determinants that develop or distort medical education, moving it further away from this goal - 'doctors for rural areas in India'.

There are atleast four factors that I feel are resulting in a stranglehold on medical education, preventing it from being able to move creatively or concretely towards achieving this goal.

1. The changing pattern of medical college entrant

Most young people who wish to become doctors come from families whose aspirations focus on urban practice, a good life with high economic returns, status and prestige and a glamour for high-tech oriented specialization, Rural primary health care is an unlikely career aspiration for such entrants.

Doctors are fast trying to catch up with other professionals – engineers, IT professionals and business managers who are seeking higher and higher salary returns. With more and more students joining private medical colleges with higher fees (self financing colleges are an euphemism) this elite and middle class aspiration is further compounded by the economic compulsions to pay back education loans and other investment made by the family.

2. The culture of the medical school

Medical college culture – be it social or professional, has continued to remain, urban, middle class and elitist. This is further compounded by the western trappings of a medical education system borrowed from the 'global north' which continues to promote that 'what is west is best? Colonialism was defeated by a political movement but the colonization of our medical minds continues! Apart from the inevitable westernization and the concurrent modernization ethos- the culture of medical college is increasingly cut off from the realities of life in disadvantaged India (Bharat). Even students from rural and disadvantaged social backgrounds get greatly attracted to this new culture and do not wish to go back to work in a rural culture that is

seen as inferior or inadequate. Community oriented primary health care or general practice aspirations would then only be an aberration if at all, among products of such institutions. Interestingly such aberrations continue and are even increasing!

3. The commercialization of medical care and medical education

The rapid commercialization of medical education as part of a privatization and commercialization of higher professional education is an ongoing and sustained trend. (In 1984 there were 125 colleges in India –100 government and approximately 25 private – while in 2009 there are over 260 medical colleges - 130 government and 130+ private). This trend has distorted the education scene and changed the overall goal of medical education from service to business. Commercialization has spawned trends such as capitation fees; increased corruption in the education system at all levels; established links with political funding; and facilitated unethical links with the growing medical industry, with resultant distortion of professional ethics and service goals of the profession

4. The irrelevance of the curriculum to the health challenges in the community

While the first three factors relate to - social, cultural, economic and political determinants that have distorted medical education goals at college level and the aspirations of the college entrants in general, these are not completely within the control of the medical college leadership and faculty, and need a larger societal and policy response. However, the continued secondary and tertiary care orientation of the teaching hospital fails to prepare the young doctor for the skills, attitudes and capacities for primary health care/community practice. This is the single most important dimension of the problem which can be changed, but has been constantly ignored.

While MCI and universities such as Rajiv Gandhi University of Health Sciences in the state of Karnataka have initiated medical education reforms and suggested many changes in the curriculum, the

continued base of practical skill development is the teaching hospital with its hi-tech and specialization ethos. This ethos fails to provide adequate opportunities or orientation to students, to practice rational and scientific primary health care and community medicine.

I have been a long term proponent of the fact that professional incompetence to meet the real challenge of primary health care is a far greater challenge for our educational system then emotional, social or cultural unprepared ness that can be tackled easily. This irrelevant learning environment is the most significant deterrent for graduates to practice in rural areas including accepting the two year rural service as opportunity rather than obligation. Present day teaching hospitals do not prepare graduates for a range of challenges in rural health care that includes:

Managing routine emergencies such as difficult labour, cardiac emergencies, accidents and poisonings- even snake and scorpion bites;

Community challenges of childhood malnutrition, gender violence, communal disharmony; corruption;

Social challenges of caste and class conflict; stigma and discrimination;

Challenges of managing health teams or enhancing community participation by engaging panchayat raj institutions and community organizations; like cooperatives, self help groups or youth , women and farmers association.

The young doctor is equally unprepared for the additional challenges of

Inter-sectoral coordination;

Creative development of appropriate technologies;

Analyzing inequities and social determinants of health

Addressing them through socio-epidemiologically oriented health care responses.

In the absence of this realistic preparation for rural practice how do we expect them to actually opt for it except through coercion which ultimately would be even more counter productive!

Having dwelt on these four distortions I would however not like to end this reflection in a spirit of despair. I am an optimist and the continuing social innovations towards this goal have been an area of interest for decades. Through the Society for Community Health Awareness, Research and Action, a multidisciplinary professional resource group, that we set up 25 years ago we have experimented with many ideas to counter these distortions and move from despair to hope. Four initiatives – hopefully countering each of the four distortions are beginning to make some difference. These are small steps but sure ones along with many others, towards reversing these trends.

1. People's Health Movement:

The first is the development of a 'People's Health Movement" in India and globally. This is better known in India as Jan Swathya Abhiyan. (www.phm-india.org. The Indian People's Health Charter identifies the need for "a comprehensive need based human power plan for health sector that addresses the requirement for creation of a much larger pool of para medical functionaries and basic doctors, in place of the present trend towards over production of personnel trained in super specialties." Its recommendations include training in district level institutions, banning of privatization and commodification of Medical Education and compulsory rural postings of undergraduates for a year and post graduates for three years.

2. Ethics in the medical curriculum:

The second is the engagement with many others, with the Rajiv Gandhi University of Health Sciences resulting in introducing an Ethics curriculum as a separate subject in the medical curriculum. This is a small but a necessary step to immunize the next generation of health professionals against un-ethical and irrational practices

promoted by a market economy rather than patient need. The challenge is to find ethical role models among the teachers so that students can learn from example. Ethics ultimately has to be **caught not taught.** We hope this course will gradually be introduced into all courses of the university- all systems of medicine and for all health care professionals.

3. Community Health Learning Programmes

The third is evolving a community health fellowship scheme, also now known as the Community Health Learning Programme that is enabling and empowering young graduates from different backgrounds- medical, nursing, dental, AYUSH, Social Sciences and social work to a vocation in community health and public health, using inter-active, participatory and experiential approaches to learning and exposing them to role models among mentors including in field projects all over the country (www.sochara.org). While the number of young doctors, dental and AYUSH practioners applying for this course is still a small number, we see the trend as increasing inspite of the irrelevancies of the educational system.

4. Civil society engagement for policy change:

Fourth is the enthusiastic and sustained involvement of civil society through the national and global people's health movement and other campaigns in vigorous and effective engagement with the system that is provoking policy change at different levels. Within the country – this has included the Jan Sunwais on the right to health care; dialogue with political parties on health priorities; engagement with National Rural Health Mission (NRHM) in programmes like community monitoring, ASHA mentoring etc: the right to information campaign; and the right to food campaign among others. All this is highly relevant to the "Health for All Goal" in India. Engagement with the NRHM task force on Medical Education has led to significant recommendations that may help to move a more seriously towards the social physician goal. This include National modules on

communication skills, behavioral sciences, management skills, and ethics and human rights; a six weeks rural orientation training package; a medical education cell in every college for faculty development, curriculum priority setting, an examination reform; and an internship that will be nine months outside the teaching hospital in district hospitals (6 months) and primary health centers three months.

Simultaneously, at global level (see www.phmovement.org) many of us have also been involved with the development of International People's Health University of PHM that is orienting young health professionals to the challenge of health and health care enunciated in the people's charter of Health (www.iphu.org) ; the Global Health Watch – the alternative world health reports (www.ghwatch.org) ; the Rights to Health campaigns evolving in different parts of the world; and the strong advocacy with WHO, that brought it back to the revitalization of primary health care and provoked it to take the social determinants of health seriously including setting up a commission.

Our Society for Community Health Awareness, Research and Action, has just launched a new jubilee unit called the Centre for Public Health and Equity to work towards a new public health alliance that will influence public health, medical education and health policy in this new creative and relevant directions.

It is most heartening to note that in all these activities – a very large number of young health professionals, soon after graduation, are participating actively. The challenges now remain on how to ensure that these ideas, initiatives and paradigms become part of mainstream medical and health professional education. Every day our centre is host to an increasing number of young people from all these bio-medically oriented colleges looking for social relevance and a community mission. All is not lost. The Social physician goal may still be feasible if we are ready to listen to these youngsters and make the paradigms shifts that are urgently awaiting policy implementation. Are we ready for this task?

Section VII

Career Development

In the hopes of reaching the moon men fail to see the flowers that blossom at their feet.

Albert Schweitzer

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Career in Army Medical Corps

Lt. Gen. L.P. Sadotra and Col. A.K. Datta

Introduction

The Armed Forces Medical Services of the Indian Army, one of the largest organized healthcare providers of the world, is an integrated tri-services organization encompassing the Army, Navy & Air Force. It has 129 hospitals and 87 Combat Medical Support Units spread across the length and breadth of India providing comprehensive medical care to include promotive, preventive, curative and rehabilitative care, to the 1.3 million strong Indian Army both in peace and war.

Provisioning of the full spectrum of healthcare services, from primary medical care to highly sophisticated tertiary medical care touching the frontiers of technology and skill, along with an opportunity to serve In all the three services in an environment of professional growth, ensures a challenging career in the Army Medical Corps. It is coupled with a lifestyle of grace, adventure and excellence, which are inherent ingredients of a career In the Armed Forces.

Brief History

The Army Medical Corps has a long and illustrious history of 243 years full of professionalism, dedication to service of humanity, courage and valour. The Corps traces its roots back to the Bengal Presidency Medical Service, which was founded on 1st January

1764. The Bengal, Madras and Bombay Presidency Medical Services were merged in March 1896 to form the Indian Medical Services. Its history includes the successes and travails of the historic Indian Medical Services, Indian Hospital Corps. and Indian Medical Department of World War fame which were merged on 3rd April 1943 to form the Royal Indian Army Medical Corps, the predecessor of the AMC as we know it today. The Army Medical Corps finally came into its present form on 15th August 1947.

Organization & Role

The Armed Forces Medical Services is headed by the Director General Armed Forces Medical Services who is of the rank of Lieutenant General. He is assisted by the Director Generals Medical Services of the Army, Navy and Air Force respectively who are also of the rank of Lieutenant General.

The Army Medical Corps provides comprehensive health care not only to the serving personnel of the Armed Forces but also to the families both, in peace and war; catering to a clinical workload of about 44,000 beds spread over 109 hospitals of the Army, 9 of the Navy and 11 of the Air Force. The hospitals range from small peripheral hospitals with just a few basic specialities like medicine, surgery, anaesthesia through zonal hospitals having all basic specialities and select super specialties to large state of the art tertiary care and referral hospitals with all modern equipment and facilities offering interventional cardiology, interventional radiology, cardio thoracic surgery and neuro surgery to name a few. In addition, there are 87 Combat Hospitals which are mobile and specifically designed to cater for the needs of the field forces during war. These also cater for an additional 3900 field beds for use during hostilities and operations. There are also other supporting units like store holding depots and training institutions.

All these facilities are manned by about 5,400 officers and 50,000

para medics. They also provide comprehensive medicare to the families, ex-servicemen and other entitled categories numbering over 18 million. Emphasis is laid on preventive healthcare, hygiene of troops and camp areas, health education, occupational health, maternal and child health and school health services. Thus comprehensive Community Health Care Is provided by the Army Medical Corps free of cost to all entitled personnel.

Emergency and trauma services are provided to all needy patients. Health care is also provided to the civilian population in border, tribal and underdeveloped areas. In addition, the Army Medical Corps is always at the forefront in time of disasters and emergencies. in India and abroad providing sterling medical services. It is one of the only dependable first responders in times of crisis or aid to civil authorities.

The Career

The AMC offers a professionally satisfying career for doctors Commissioned Officers in the Indian Army with all the perks and privileges of a Class I Gazetted Officer (details attached as **Appendix**). It is a challenging career option with dual responsibilities of a physician and clinician on one side and a soldier on the other. It offers all round development of the personality of an individual with ample opportunities for developing and enhancing knowledge and professional skills. It also offers an array of opportunities for adventure and sport to encourage the wholesome development of body and mind, and all this in addition to the thrill, glory and pride of serving the nation.

The Army offers permanent and short service commission in officer rank. Permanent commission implies making the Armed Forces a permanent career choice while short service commission officers are required to serve for a minimum period of fives years, which may be extended to ten years at the discretion of the Government. Pay and

allowances, terms and conditions of service are similar for both types of commission except for retirement benefits.

Rank on Entry and Promotions

A candidate is granted the rank of Captain on first commission provided he is in possession of full Medical Registration. Promotion up to the rank of Lt Col is time based subject to satisfactory service and fitness as per laid down criteria. Promotion to the rank of Col and above is on the basis of merit based selection and an AMC Officer can rise up to the rank of Lt Gen in the Indian Army.

An officer gets an opportunity to serve in and see the entire length and breadth of the country from the rugged high altitudes of Northern India through the scenic deserts of Rajasthan and the picturesque jungles of North Eastern India to the salubrious climes of South India. He can opt for special training and serve with the elite Special Forces (Para Commandos).

Service Abroad

Army officers have a liability to serve in India and abroad in line with the directives and policies of .the Government. An officer gets many an opportunity to serve abroad as part of the United Nations Peace Keeping Operations, Indian humanitarian missions or training teams in friendly foreign countries. Presently over 100 AMC officers are deployed in various Indian missions in over 10 countries round the world to support UN Peace Keeping Forces and provide humanitarian assistance to local civilian populace. Infact, AMC has been participating in missions abroad right from the days of the Korean war not to mention the world wars.

Professional enhancement

The AMC offers ample opportunities for professional enhancement and skill development to ensure the maintenance of high professional standards. The Army has a heady blend of cutting edge technology

and ultimate frontiers of knowledge and lifestyle of Army. All service hospitals are equipped with the latest equipment and offer all the modem treatment facilities. The tertiary care, referral & teaching Hospitals offer state of the art ultramodern facilities like gamma knife, 3 Tesla MRI, PET scan, interventional radiology, interventional cardiology, assisted reproduction technology and micro-vascular surgery to name a few.

As a matter of policy all officers are encouraged to acquire post graduate qualifications in clinical or para -clinical subjects. Armed Forces Medical College Pune, INHS Ashvini Mumbai and Command Hospital (Air Force) Bangalore are recognized teaching institutions that offer post graduation in 25 basic specialties like General Surgery, Medicine, Orthopaedics, Paediatrics, Pathology, Preventive & Social Medicine etc., and super specialization In 33 sub-specialties like Cardiology, Cardiothoracic surgery, Vascular surgery, Neuro surgery, Immunology, Interventional Radiology and Transplant Pathology etc. Besides these, 12 Service hospitals are also recognized for DNB examinations in various subjects including super specialities or fields like family medicine, rehabilitation medicine and geriatric medicine.

A medical officer gets an opportunity to do post graduation between 3- 6 years of service. Selection is based on a common entrance examination conducted by the Directorate General Armed Forces Medical Services. A specialist officer works as a junior specialist for four years before being classified and becoming a senior specialist and then going on to become an adviser and a consultant in his specialty. He also gets a chance to do super specialization after four years of specialization either as an in-service education programme or while on Study-leave in an institution of excellence like All India Institute of Medical Sciences, New Delhi.

Those not doing post graduation in clinical disciplines are offered an opportunity for post-graduation in hospital administration, sports medicine, medical informatics, law, family medicine, geriatric

medicine and MBA among others. An individual can opt for Study Leave to pursue recognized courses of higher education in India and abroad for a super specialization or training of his choice.

Continuing Medical Education (CME)

Participation in seminars and conferences of recognized professional societies is encouraged and so is publishing of' papers. Armed Forces Medical Research Committee is dedicated to the cause of medical research and funds projects and studies. Attending and participating in CME's is mandatory. CME's are regularly held on regional and national levels at service Hospitals. Clinical meetings and presentations are routine in all hospitals.

Miiitarv Courses

In addition, the officer has to participate in a series of mandatory and optional professional military and administrative courses to hone their skills.

a. On entry the officer undergoes Basic Course (AMC) to give an insight into the Army, military medicine and field surgery. He thereafter does Junior Commanders (AMC) course before he becomes Lieutenant Colonel which in addition to a military phase in Officers Training School Lucknow, has a professional phase in Armed Forces Medical College, Pune for updating knowledge and skills, and familiarization with the advancements in all fields of Medicine. There are also other courses available for training in administration at senior level.

b. A person may opt for courses like Junior Commanders (All Arms), Defence Services Staff Course, Long Defence Management Course and National Defence College.

Retirement

An AMC officer retires between the age of 57 for Colonel and 62 for DGAFMS. On retirement an individual is entitled to retirement

benefits in the form of gratuity and pension. An ex-serviceman continues to enjoy the facilities of medical treatment and canteen facilities.

Short Service Commissioned Officers

Short Service Commissioned Officers are allowed three chances to appear in departmental interviews for grant of Permanent Commission at any time after completion of two years SSC Service and before completion of eight years service, provided they fulfill the conditions of eligibility laid down. After release from service Short Service Commissioned officers are provided facilities to undertake Post-graduation studies at Armed Forces Medical College, Pune and nominated Service Hospitals.

Lady Officers

.Lady Officers enjoy all the perks and privileges of regular service officers.

Eligibility for Commission

Citizenship.

Candidate must be a citizen of India or Bhutan. Subjects of Nepal and persons of Indian origin, migrated from specified countries with the intention of permanently settling in India, are also eligible after obtaining a certificate from the Government of India.

Qualification and Age

There are different ways in which a person can join the AMC on the basis of examinations conducted by office of the DG AFMS. Some of these are :

a. **Armed Forces Medical College, Pune**. A candidate having science subjects including Biology can join AFMC after class XII on the basis of an open all India competitive examination conducted on the first Sunday of May every year. The age limit

for the entrance exam is 17-22 years as on 31st December of the year and 24 years for the candidate who has passed B.Sc., final exam. The intake of AFMC is 105 boys and 25 girls annually.

b. **After MBBS**. A candidate can join after successful completion of MBBS course from any recognized Medical College after internship. Notification of vacancies is intimated in all leading dailies of the nation. The maximum age limit for MBBS graduates is 30 years as on 31st December of the year of applying.

c. **After Post Graduation**. A candidate may also join after Post graduation (MD/MS) from any recognized medical college. Maximum age limit for PG degree holder is 32 years as on 31st December of the year of applying. An antedate seniority is applicable as under:

(I) Post graduate degree - 2 year seniority

(ii) Post graduate diploma - 1 year seniority

(iii) House job - 6 months

d. **Short Service Commission** The maximum age limit for Short service commission is 45 years.

Medical Fitness

All applicants must be medically fit as per prescribed standard for the Army.

Conclusion

The Armed Forces Medical Services provide a highly satisfying career professionally, coupled with high standard of graceful life style, in service perks and post retirement benefits. There are ample opportunities to acquire post graduate qualifications in basic and super specialties. The facilities available in Armed Forces Hospitals are at par with the best available in private/corporate hospitals.

Therefore the career in Armed Forces is geared towards excellence in professional field and opportunities to rise to high ranks of Army In a life full of adventure.

Annexure

(Refers to para 8 of article)

PERKS & PRIVILEGES OF SERVICE

1. **Leave:** An officer is entitled to two months of annual leave and 20 days of casual leave in a calendar year. Officers are also eligible for two months furlough at half pay once in three years.

2. **Travel Concessions:**

   a) Officers are entitled free travel in AC or even by air depending on rank on duty moves

   b) Officers and their families are authorized six one way Form 'D's which enable them travel in entitled class on payment of 60% of rail fare.

   c) Airlines offer 50% concession in basic fare to officers and their families traveling on leave.

   d) Leave Travel Concession. Officers are entitled to LTC as per the prescribed rules.

3. **Medical Treatment**: Officers are authorized free medical treatment for themselves and their family including dependent parents. There is provision to reimburse cost of certain specialized treatments which are not available in service Hospitals.

4. **Accommodation**: The officers are authorized furnished accommodation with allied facilities at nominal rentals i.e. .2.5% to 5% of pay per month in accordance with pay scale and partially subsidized electricity and water. Single accommodation is also provided in Officer's messes.

5. **Ration:** Free ration are provided to all officers at the scale as prescribedby the Government for self only.

6. **Welfare:**

a) Army Group Insurance scheme provides insurance cover of 15 lakhs. Post retirement insurance cover of Rs. 4 lakhs is also available till 75 years of age.

b) Army Welfare Housing Organization scheme provide housing for serving and retired Army personnel and widows of Army personnel at selected stations across India on a 'No profit No loss' basis.

c) Army Officers Contributory Education Fund (~ Children of officers studying in school/colleges are granted scholarship for a period of eight years commencing from the date a child attain the age of 10 years.

d) Army Officers Benevolent Fund (AOBF}: A grant on amount a sliding scale dependent on length of service is paid to the officer on attaining 75 years of age or on demise to the NOK.

e) **Education:** Army Welfare Education Society runs a chain of schools in all major military stations specially for children of service personnel. They also run engineering, Dental, Law, Hotel Management, Nursing, Management, Medical and B Ed colleges to mention a few.

7. **Canteen Facility:** Service canteens supplying varied items at special rates are available in all stations and units.

8. **Adventure activities**: Adventure enthusiasts and those with a yen for the ourdoors will find ample opportunities to take part in activities like Car rally, mountaineering and river rafting etc. AMC officers regularly participate in activities like Raid-de-Himalayas, Himalayan car rally, mountaineering expeditions, hot air ballooning, motor cycle expeditions, para sailing etc.

9. **Sports and Games:** Participation in outdoor games in units is mandatory. In the past AMC officers have represented the country and brought laurels to the Corps and the Nation.

10. **Messes**: There are Officers Messes at all stations to provide food and beverages at very economical rates.

11. **Clubs:** A chain of clubs known as 'Defence Institutes' exist in the country for exclusive use of Defence Officers and their families.

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Distant Shores- Are They Beautiful?

a) Opportunities for Indian Doctors in the UK

Rajive Mathew Jose

Historically the United Kingdom (UK) has been an attractive destination for Indian doctors and till recently this was actively encouraged by the British government through several schemes and visa provisions. However the scenario has changed over the last few years quite dramatically owing to various reasons.

First and foremost the intake into Medical schools in the UK was significantly increased which meant more students were graduating locally. Also the formation of the European Union encouraged more influx of doctors trained in other European countries to the come to the UK. The structure of training in the National Health Service (which is the state run health care provider in the UK) has been radically revamped last year leading to a reduction in the number of training posts thereby increasing the competition. This resulted in a closed-door policy and the visa provision called Permit Free Training for overseas doctors was abolished completely in 2006. The selection to the training programs were preferentially offered UK and European Economic Community doctors first. However an agitation and a legal action by BAPIO (British Association of Physicians of Indian Origin) resulted in the decision being revoked and overseas doctors with a right of stay or visa are currently eligible to apply on par with British and EU candidates.

However the selection process for higher training in medicine in the UK is in a transitional stage with its own teething problems and it will be at least another year before it will be fully in place.

Who can work as a doctor in the UK?

Any doctor who is registered with the General Medical Council (the equivalent of Indian Medical Council) and has a valid visa or right of stay can work in the UK. To register with the GMC a doctor should either have trained in the UK or Europe or one of the Medical Schools which are approved by the GMC. All doctors trained in India have to either write a qualifying examination called PLAB (Professional and Linguistic Assessment Board Test) conducted by the GMC or should have their training recognised by one of the Royal Colleges in the UK as equivalent to British training. The latter can be achieved either by passing the Fellowship Examinations of the Royal Colleges such as MRCS or by applying to one of the overseas sponsorship schemes offered by the Royal Colleges. PLAB examination is conducted by the GMC and further information can be obtained by the GMC website, www.gmc-uk.org. In the past even if a doctor was eligible to apply for GMC registration through PLAB or through any other scheme, registration could only be obtained on offer of employment by a hospital. This has been changed recently and any eligible doctor can obtain Limited Registration. Though this may seem an advantage one has to bear in mind that even with GMC registration one needs to be on a work permit or a valid visa to commence employment. The first time an overseas doctor registers with the GMC he/she is usually given a Limited Registration for a period of one year to eighteen months and this period has to be a supervised employment. Subsequent registration is permanent and has to be renewed annually.

One needs to have a valid visa to undertake employment in the UK. In the past majority of doctors worked under what was called a Permit Free Training visa which was abolished in 2006. Now one either needs to apply through the Highly Skilled Migrant Scheme (HSMP) which is a point based scoring system or apply for a work permit through the employer. Under the current laws a doctor outside the European Union can only be employed if there is no suitable local or

European Union candidate which makes it difficult for overseas doctors to compete for jobs. For more information visit the website of the British Immigration and Nationality Department (www.workingintheuk.gov.uk/).

Studying in the UK

UK medical schools take overseas students into undergraduate training. There are currently 30 Medical schools in the UK including four new ones. About 7.5% of the Medical students in the UK are from overseas. This amounts to 6 t0 16 seats every year in a Medical School and some Medical Schools preferentially take students from countries where facilities for Medical education are limited. The Medical course usually takes five years but can take six of students take an intercalated degree. The students from UK Medical schools have to undergo a two year foundation program which is known as FY1 and FY2 which are equivalent to the internship in India. Unlike Indian Medical schools UK Medical schools differ in their curriculum and teaching methods from each other. Some emphasise subjects such as Anatomy and have dissection sessions whereas others have reduced lessons in basic subjects and emphasise more on clinical subjects.

Recently a number of medical schools have introduced a four year fast-track graduate entry Medical school programmes called the accelerated graduate entry programme(GEP) which leads to the same qualification as the usual undergraduate course (MB ChB, etc). GEPs are currently offered by the following medical schools:

Queen Mary University of London

University of Newcastle

University of Nottingham

University of Oxford

University of Southampton

St. George's University of London

University of Wales, Swansea

University of Warwick

King's College School of Medicine (London)

University of Birmingham

University of Bristol

University of Cambridge

University of Leicester

University of Liverpool

Competition for GEP places is very intense and you will usually need at least an upper second class degree or the recognised equivalent.

The entry requirements for the UK medical schools are stringent and websites such as www.educationuk.org and www.chams.ac.uk give further information along with the British Council website www.britishcouncil.org.

Before considering studying Medicine in the UK one has to bear in mind that studying in the UK automatically does not lead to a career in the UK. Current immigration laws allow overseas students to carry out the two year foundation programmes but subsequent employment and training are limited by visa restrictions. The cost of studying in the UK is also a factor to consider for overseas students.

Consultant Level Entry

There are some specialties such as Psychiatry and Anaesthesiology where overseas trained doctors have been recruited directly from countries such as India. This is not a frequent scenario and is usually done when there is extreme clinical need. With the influx from

European countries into the UK it is unlikely that more such recruitments will take place in the future.

Training programs which do not involve clinical work

Several Universities in the UK offer courses which do not involve clinical work. They do not require registration with the GMC and the new visa regulations do not restrict overseas students from applying for these courses. The MCh course in Orthopaedics conducted by Dundee University is one such course. These courses are not supported with a stipend and the student is expected to bear the course of the fees as well as the living expenses. These courses do not involve hospital work and trainees do not get exposure to surgical techniques.

Sponsorship schemes from Royal Colleges

Medical and Surgical Royal colleges in the UK have in the past offered several sponsorship schemes for overseas doctors in come and train in the UK. The International Paediatric Training Scheme (ITPS) was one such scheme that offered a non-PLAB route for overseas doctors to work in the UK. Currently the scheme is still open but the visa restrictions for employment apply to this scheme as well. Doctors who are eligible to work in the UK through right of residence, spouse visa or eligibility for HSMP scheme can apply to this scheme. More information can be obtained through the website of the Royal College of Paediatrics (www.rcph.ac.uk).

Research Opportunities

There are some centres offering research opportunities open to international students. These are mostly in basic specialities and those who benefit are the ones who have done post-graduate training in these specialties in India. These jobs are usually advertised through www.bmjcareers.com.

Clinical Attachment/Observership

For those who have established careers in India and want to have

exposure to a speciality or technique in the UK it is possible to spend time as an observer in a department. There is a newly introduced class of visa for this type of a post and is self-financed. One needs to identify the place to spend the time and write to the Consultant in the unit directly. It is a fairly elaborate process and some hospitals charge a small fee for this as well.

A career outside Medicine....

There are a handful of doctors I know who have made an excellent career outside of Medicine in the UK. MBA is an excellent career choice for doctors who want to explore beyond the frontiers of Medicine. There are several UK universities offering MBA courses to overseas students and have the advantage of a shorter training period as compared to Indian MBAs. However one must be careful in choosing the right place since more than in any other degree it matters in an MBA as to where one has done it from London Business School is one of the top choices and requires GMAT sores for application. These are self-financed courses and the average fees for a 15-21 month course will be approximately £50,000 excluding living expenses. There are however opportunities for part-time employment for students either within the campus or outside.

Those interested can visit the website of British Council for further information.

The Reality and My Personal View

At present there is a disparity between the number of trainees in pursuit of Higher Surgical Training and the number of posts available. The competition to get onto a Higher Specialist Training programme is fierce and tremendous competition has made entry onto the Specialist Registrar Grade difficult. In some specialties, there are about 200 - 250 basic surgical trainees competing for one job on a Higher Surgical Training Programme.

Anyone who has been watching international news must be aware of the controversy regarding the new visa regulations and the implementation of the new training scheme as well as the selection process. It will be inadvisable for any Indian doctor to undertake PLAB test at this time unless they have a right of residence or right to work in the UK. At present there are several overseas doctors who have passed their PLAB and not managed to get their first job and several of them have gone back to India suffering personal financial losses. The dynamics of recruitment in the UK is ever changing and it may happen in the future that more opportunities may evolve but at the current time it is almost an unofficial closed-door policy for overseas doctors wishing to train in the UK.

The exceptions to this would be those who have been offered sponsorship schemes through Royal Colleges or those specialties where there is a shortage of staff and overseas recruiting is necessary.

Useful website links

1. www.gmc-uk.org : Website of General Medical Council. Gives information about registration process for doctors as well as information about PLAB test. Do read the small print that passing the PLAB test or being eligible for registration does not guarantee employment in the UK.

2. www.bmjcareers.com : Website of British Medical Association where NHS jobs as well as private hospital jobs are usually advertised. These are mostly aimed at people in the UK since the time from application to interviews is quite short.

3. www.britishcouncil.org : Website of British Council which gives general information about training opportunities in the UK. Those who are keen to branch out outside of Medicine will benefit from visiting this link.

4. www.rcph.ac.uk: Website of Royal college of Paediatrics. Gives information on International Paediatrics Training Scheme.

5. www.rcsed.ac.uk : Website of the Royal College of Surgeons of Edinburgh

6. www.rcseng.ac.uk : Website of the Royal College of Surgeons of England

7. www.nhscareers.nhs.uk : Website giving information about careers in the UK. Very general information and not specific to the current situation.

8. www.workingintheuk.gov.uk/: A must see link for anyone looking for employment in the UK. Gives information on visas to UK. A regularly updated site with reliable information.

9. www.bapio.co.uk: Website of British Association of Physicians of Indian Origin. Useful link which gives information on the current job scenario and controversies.

10. www.mmc.nhs.uk: Website of the new NHS training scheme called Modernising Medical Careers. Currently changes are expected to this scheme information is likely to change.

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b) Making your way into a US Residency Program

Dr. Kedambady P. Sheka and Dr. Ashok Muralidaran

Introduction

The physician recruitment scenario in the United States is in a state of flux with significant shortages expected in the upcoming years. This was outlined in the AAMC Statement on the Physician Workforce released in 2006 by the American Association of Medical Colleges (AAMC). Certain reports released in the 1980s had falsely predicted an excess of physicians by the turn of the century and subsequently, certain suggestions were made to limit the entry of International Medical Graduates (IMGs). Later analyses have predicted shortages and steps are underway to address the issue including attempts to increase the capacity of American medical schools. Presently, the crucial role played by the IMGs is well appreciated and encouraged especially concerning their efforts in serving the underprivileged sections of the society. International graduates currently make up approximately 25% of the US physician population with Indians contributing to nearly 20% of the IMGs.

Market forces that vary according to the patterns of demand and supply influence demands for select residency positions in the US. Periodically, the most sought-after specialties differ based on the prevalent reimbursement rates that are decided by the government and the insurance companies. This also directly affects the probability of foreign graduates' entry into the residency positions. For example, entry into general surgery now though still difficult, is nearly not as difficult as it used to be a couple of decades back. Anesthesiology now is highly competitive, a recent change reflecting high consultant compensations. Most medical school graduates in the US talk about

the "ROAD to happiness" implying applying to Radiology, Ophthalmology, Anesthesiology and Dermatology for a good lifestyle.

An outline of the process

The most important first step while applying for a residency program in the United States is to be cognitive of all the organizations involved in the process and to understand their roles and interactions. It is easy for a candidate to lose his/her bearings while trying to comprehend the function of so many players involved in this seemingly simple process of choosing a residency program - ECFMG, USMLE, TOEFL, ERAS, FSMB, NBME, NRMP (the "match"), ACGME, AAMC, AMA and where applicable, the various State Medical Boards. Then of course are the visa issues. We will attempt as a part of this article, to introduce these organizations to the reader and clarify their functions with respect to the residency program.

The very first step of course, begins at home. After deciding upon the US to pursue a residency program, the candidate should get started on the medical school paperwork on time. This mainly involves obtaining the medical school/college transcripts- a set of documents detailing all the rotations and their chronology, the number of hours spent in all the subjects, the exams taken with the number of attempts and scores. This also includes a list of rotations with their dates as part of the internship or house-surgeoncy. The dean's letter or the Medical School Performance Evaluation (MSPE) is not applicable to our context, this being a very specific letter detailing a candidate's strengths and weaknesses written in a certain format by the dean of American medical schools. In some cases of insistence by programs to produce one, it has often been another letter of recommendation (LOR) from the dean, or sometimes, a course-completion or a conduct certificate signed by the dean. Other documents required are LORs, usually 3 or 4, and a well written Personal Statement (PS).A

word of caution about the PS – it should be original as far as possible, and if parts of it have been taken from another source, proper credit should be given to the original. Honesty is the key to a good PS as dishonest or inflated claims if identified can have very serious academic and disciplinary consequences.

Broadly speaking, the residency programs are based on either university or community hospitals, with the latter being usually more foreign-graduate friendly. The hospitals have to be approved by the ACGME or the Accreditation Council for Graduate Medical Education for hosting a training program. A list of training programs that are specialty and state specific can be obtained from FRIEDA online or Fellowship and Residency Electronic Interactive Database. This is a continuously updated program database maintained by the AMA or the American Medical Association and the AAMC. A printed version of the same is available at all American consul libraries as the "Green book".

For training programs in the US to accept foreign medical graduates (FMGs), the ACGME requires that they be qualified equivalent to American medical school graduates. This process of accrediting foreign graduates is performed by the ECFMG or the Education Commission for Foreign Medical Graduates, a private non-profit organization created for this purpose. It is only after obtaining the ECFMG certificate can one become eligible to train in a U.S residency program. It is important to note that only the students from medical schools that are listed by the World Health Organization (WHO) in the World Directory of Medical Schools are eligible for entry into this process. One can approach the respective medical school office to know of their WHO listing status.

The ECFMG certification process involves the TOEFL (recently taken off the from requirement) or Test of English as a Foreign

Language, two USMLE written exams, steps 1 and 2 (Clinical Knowledge or CK) and the Clinical skills test, now part of step 2 as the step-2 CS.

The TOEFL is conducted by the ETS or the Educational Testing Services, a non-profit organization that conducts various online tests including the popular Graduate Record Examination (GRE).The USMLE is sponsored by the Federation of State Medical Boards Inc. (FSMB) and by the National Board of Medical Examiners (NBME), and as the name suggests, is used by various medical licensing boards to assess competence of medical graduates.

For applying to the various programs, the portal most commonly used is the ERAS or the Electronic Residency Application Service, a program of the AAMC. ERAS serves as a command center for receiving all the important documents from the candidates like LORs and transcripts, scans them and electronically transmits them to the programs that the candidate has applied to. Almost all residency programs and some fellowship programs use the ERAS for receiving applications.

After interviewing with the programs comes the final decision to rank them in the candidates' order of preference. The final assignment of the candidate to a program is most commonly performed via the NRMP (National Resident Matching Program) or "the match". NRMP, again, is a non-profit corporation set-up to assign candidates to graduate positions at a uniform date using an impartial process. Both the candidates and the programs rank each other, i.e, the candidates submit a list of their preferred programs ranked from the most to the least preferred to the NRMP, and the programs too submit a list of their preferred candidates in a decreasing order. Finally the match algorithm assigns each candidate to a program if they have been ranked by that program.

In brief

Choosing a program

This is arguably the most asked question by potential candidates and the one that's most researched and discussed upon. Geographic considerations apart, it often boils down simply to the only programs that have extended the courtesy of an interview! On a more serious note, the choice is multifactorial and highly individualized. A lot depends on the individual's credentials, notably exam scores, previous clinical and research experience and of course, strength of the LORs and personal contacts. One way of short-listing a program is to contact them to find out if they have FMGs in their program and if they sponsor a visa. As mentioned above the FRIEDA is a useful official website to obtain a state-wise list of ACGME approved programs.

The visa issue

The two broad categories of visas provided for graduate medical education is the H1B and J1. A detailed description of these is beyond the scope of this chapter and the authors' expertise and hence we will touch on the bare essentials.

The J1 is a visa sponsored by the ECFMG and is also called the Exchange Visitor Visa. This is valid for a period of 7 years at the end of which, or after completion of training, whichever comes earlier, one has to either go back to the country of origin for 2 years or work in the US at places designated as being medically underserved (the "J1 waiver" jobs or HPSA – Healthcare Professional Shortage Areas) for which the candidate has to be sponsored by the healthcare institution.

The H1B, on the other hand is a work-permit visa for skilled jobs. This is sponsored by the institution and has validity for 6 years with scope for yearly extensions beyond that. This visa brings greater flexibility for research or for future jobs and permanent residency options and is generally preferred over the J1.

Though not the rule, generally speaking, the University programs offer only the J1 while community hospitals also offer the H1B. This information is usually provided on the respective program's website, or can be obtaining by contacting the program coordinator.

The interview process

Interviews are usually held from October through January and are meant to closely assess the candidates' communication and interpersonal skills. Only academically qualified individuals are filtered for the interviews and hence not too much emphasis is placed on medical knowledge. Hence, it's obvious that the candidate be well groomed and converse in a clear and concise manner. The interview is also the time when the candidate gets the best access to information about the program. All questions about visa issues, future fellowship and job prospects, placement of past residents, the amount of non-academic ("scut") work-load in the program etc. should be well investigated. The best information along these aspects is often obtained from the residents in the program.

The match the pre-match and the post-match scramble

As mentioned earlier, almost all residency programs use the NRMP or the match to fill their positions. Some programs either completely or partially attempt to fill up their spots even before the match by usually offering their spots during the interview process, a practice referred to as the "pre-match". This is considered to be in violation of the match ethics and is discouraged unless the candidate immediately withdraws from the match.

The candidates are to separately pay and register for the match on the NRMP website. It is important while ranking the programs to not include one where a candidate does not want to train in, lest by unfortunate circumstances he/she be matched to that program. The match is actually more favorable to the candidate in that preference is given to the candidate's first choice of a program and not the other

way around. The NRMP also gives the option of two candidates wishing to live in the same geographic zone to go for the Couple's Match. In this process, the two applications are "linked" together, hence are considered for the interviews and the match together. The candidates can apply to different specialties and still go for the couple's match.

After the match results are released comes the filling of the unmatched spots or the "post-match scramble". This procedure is only for the applicants that have applied for that year's match and have not secured a spot. Here, the applicants directly contact all the programs that are unfilled to obtain a spot. The whole process is completed within a few days of the release of the match result in mid-March.

Who needs USMLE Step 3?

It is only after clearing all the three steps of the USMLE can one apply for a medical license from state medical board. It is required to complete step 3 before completion of the residency. But for candidates applying for an H1B visa, the step 3 should be cleared before starting the residency program as this visa is considered a work-permit and hence it should be declared that the candidate can provide patient care in an unsupervised setting, which is what passing the step 3 implies.

List Of Important Organizations And Their Websites:

ECFMG: www.ecfmg.org
USMLE: www.usmle.org
ERAS: www.aamc.org/students/eras
FRIEDA: www.ama-assn.org/go/frieda
TOEFL: **www.ets.org/toefl**

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c) Opportunities for Indian doctors in Australia and New Zealand:

A critical appraisal

Dr Vidyasagar Casikar

The general principles apply equally both to Australia and New Zealand. The New Zealand being a much smaller population tends to be more restrictive than Australia. There are many misunderstandings regarding the job opportunities in Australia. The websites usually give a fairly good description of the procedures involved in getting into the Australian Medical System. Before going into those, I would like to highlight some of the basic principles, which are not well known and/or usually not clearly indicated in the information sites.

Australian government actively encourages "Australian doctors policy". The medical college intake has been doubled and the training period has been reduced to about 4 years. It is generally expected that by 2010, the Australian Medical System would be self-sufficient and would not require overseas support.

There is neither racial nor color discrimination. All ethnic groups and origins are equally treated. The government has very strong regulations for any racial discrimination verbal or otherwise. The main discrimination is for overseas doctors globally. It does not confine to any one particular race or creed.

The standards of medical graduates coming out of the Australian Medical Schools are like those from the old LMP system. Anatomy and physiology are not taught in regular classes. The whole medical system is based on modular and problem based concept. The students are mainly prepared to function as general practitioners at the end of

this medical curriculum. A great deal of emphasis is put on social history, social medicine, family health, and such other matters, which are required for a general practice.

Professional development is very widely encouraged and there are many opportunities for doctors to develop special skills in various areas depending upon their individual needs. The choice is very wide and each doctor depending upon his or her requirement can get additional training to make the required standards. Professional development is very carefully monitored by the Various Medical Boards.

The whole process of application and all the formalities take up to one year. The websites given indication that it is very well organized and the paper move quickly, this is not so. Candidates will have to be prepared to wait for a period of one year. There are of course exceptions.

There are various bottlenecks for the doctors from overseas seeking employment in Australia. These bottlenecks are very subtle and are not very clearly indicated in the website information. The bottlenecks are Australian Medical Council and at the Royal College level. There is a wide difference between the stated policy of the government regarding overseas recruitment and the view of the actual selection bodies, which are involved in the selection process. The main reason for this discrepancy is because of the Australian Private Practice System. Most of the doctors in the county have a kind of private practice and have attachments to the hospital. There are various degrees and types of private practice and hospital attachments depending upon the specialties, the local requirements, and the general perceptions of the doctors and the employers. The Medical Council and the Royal College are entirely controlled by the specialists who are in private practice and they do not wish to encourage more doctors coming into the pool, as this would definitely dilute their private practice. Contrary to what happens in India, the

medical paternity has a very strong hold and the political powers have very little influence to change the system. This is not generally reflected in the website information.

Unlike in the UK, access to postgraduate degrees is very restricted and generally discouraged for overseas doctors. This is a very important feature of the Australian Medical System. Great number aspiring young doctors when they come into the country, find this as an unpleasant surprise. Overseas trained doctors wishing to enter a postgraduate training position termed ITP (Integrated training program) with the various Royal Colleges are required to satisfy two important requirements. They have to be "Australian Permanent Residents" and posses unconditional registration with the Australian medical board. On rare instances candidates with limited registration are permitted to enter the training program provided they have passed the required Australian Medical council examinations. The examination consists of a theory paper and a clinical examination. There is generally six months waiting period to get the date for the first component of the exam and a further period of six months to appear for the second part. The cost is around $ 4000.

It is possible for doctors to come in for a brief stay in the country either as a fellow or as a postgraduate trainee. A fellow is generally a doctor who has already has a established postgraduate qualification in a specialty and has a wide experience in that subject for at least 10 years. These people are encouraged to come into the country for short periods of time generally 1 to 2 years. The other way of getting into the system is like a postgraduate trainee. This term is misleading. This does not provide any kind of postgraduate training that is suitable for an Australian Royal College examination. The term indicates that the person has finished his graduation in his own home country and he is training as a general doctor in the hospital. This is again a matter of great disappointment generally for overseas doctors who do not understand this terminology clearly.

The jobs in Australia are generally open to the overseas doctors in what are called area of need positions. This means that if a particular position is not filled up by a suitable Australian applicant after 3 advertisements over a period of three months then that particular job is declared as an area of need position. An overseas graduate then becomes eligible to apply for such positions. These areas of need positions aren't that are rapidly decreasing in number. However, there are usually a significant number of openings available for general practice in the rural areas called as outbacks. These are remote areas generally inaccessible to the main town and the local graduates do not like to go to these positions because of lack of facilities, education for their children, and other sources of entertainment. These doctors are very isolated from their peers and have very poor support from the colleges. There are therefore not popular with the local graduates. These jobs are comparatively well paid and the lifestyle of course is very rural. The overseas graduates once they get into this system can get into the main stream of specialties if they wish to after a period of 4 to 6 years. This is the official policy. This generally does not happen and overseas graduates find this very frustrating.

It is possible to get into the Medical Education System as a paid candidate. This is encouraged and aggressively marketed. There is an entrance examination and depending upon the performance in this examination, the candidates become eligible to get in as paid medical students in various medical schools. This is encouraged because each paid student is able to finance at least 3 local Australian graduates. It is important to realize that entry into the medical colleges by this method does not guarantee an access into the Healthcare System. The graduates do not as a rule are able to obtain internship-opening positions. They are encouraged to go back to their countries of origin and continue their internship training. This is not generally clearly mentioned when various agencies encourage overseas applications to

join medical schools. It is not possible to integrate into the medical system through this door. The standards of medical education in many of the privately funded Universities are poor. It is necessary to check the reputation of the university before getting into expensive courses. The Australian agents who sell these packages in India do not give an accurate assessment for obvious reasons.

There is a certain perception that one can go on a visitor's visa and find a job and then change the visa status and get into the system. This is not possible and is not encouraged by the system. A number of occasions when a candidate is successful by this method are extremely small.

The employer sponsors the "area of need " positions. The successful candidate is given a visa for a specific period of time. At the end of the job, the candidate is expected to return back. It is not very often possible to extend this visa for more than a year at the most. The sponsored employment visa can seldom be transferred or changed into a permanent visa. This particular restriction applies to the medical graduates. However, candidates in other specialty like engineering and electronics have a much better access to integrate into the system.

There is a possibility for certain types of doctors to get into the Australian system bypassing the usual procedure. These are usually fully trained experienced specialists with exceptional qualifications. They can get access to a consultant position in the areas of need locations, sometimes as professors and other higher-level teaching faculties. This does not happen often.

Official Policy of the Australian Health care

People wishing to have more information on the website can get this from www.immi.gov.au/wwi/contents.htm. These websites usually give very exhaustive official information. The following are some of the important features of this website. These websites indicate that

the overseas doctors can enter Australia on a temporary or a permanent basis to fill positions in the medical force that cannot readily be filled by a suitably qualified Australian doctor.

When a State or Territory Health Department considers that there are not enough doctors available to provide adequate healthcare services in a specific locality or in a particular specialization, they can declare a position in that locality and/or sub specialization to be an area of need position. Alternatively, a State or Territory Health Department can simply identify positions, which it supports being filled by overseas doctors. In all cases, overseas doctors must be sponsored usually by their employer in Australia and they must be eligible to meet State or Territory Medical Board Registration requirement. In addition, they must meet normal immigration requirement in respect of good health and provide local police clearances for all countries in which they have lived for more than 1 year during the last 10 years. There could be sometimes a small problem in this particular area.

There are a certain number of doctors who work in Middle East and then try to move to Australia. A police clearance requirement from Saudi Arabia is not always easy if one who leaves the county. Those doctors are advised to get a police clearance from their local embassies or from the local police stations before leaving the county (Saudi Arabia).

Temporary Entry

The temporary entry medical practitioner is usually classified as subclass 422 visa. The overseas doctor is expected to get in addition to Police clearances, form 47P under the health including HIV and hepatitis B and x-ray checks. These forms are numbered 26 and 160.

They need to apply to the relevant State or Territory Medical Board for registration to practice medicine in Australia. Clearance from the Australian Medical Council does not necessarily mean that the doctor can practice anywhere in the country. In addition, they have to obtain

clearances from the local State Medical Boards as well. This process is very repetitive, but these are very necessary and normally take a long time. The subclass 422 visa has to be applied using the form 147. Note (the visa application forms are very well organized and are available on site). They all have basically the same kind of information, but the number on the form is extremely important and one has to make sure that the visa form with the correct number and subclassification number is used, otherwise the application does not get accepted.

The visas applications can be lodged in the Department of Immigration and Migration, normally called as DIMIA. The temporary entry is usually for the maximum period of 4 years. Further extensions are not generally encouraged. Doctors who come on temporary visit to Australia can usually bring their family members with them. The family members who accompany the doctors can take up certain kinds of occupation and study in Australia. However, such studies and schooling for the dependent children are subject to fees. The Australian citizens very often do not have to pay for the school fees. In addition, overseas doctors and their families on subclass visa will not have access to publicly funded healthcare under the Australian Medicare Scheme. Access to medical care could be very expensive for doctors who are on temporary entry. It is an accepted practice for the doctors to charge their professional colleagues and their family as private patients. Private insurance is expensive.

Permanent Entry

Doctors wishing to remain permanently in Australia can apply under the Employer Nomination Scheme or Regional Sponsored Migration Scheme Visa Subclass. These subclasses provide opportunities for employers to recruit overseas doctors to fill positions that cannot be filled from the Australian Labor Market. These doctors have to satisfy the Australian Medical Council and appropriate Royal

Colleges of their qualifications and clinical expertise. These doctors who wish to have become permanent employers in the Healthcare System need to satisfy the Australian Medical Council regulations. These usually include an occupational English test, a multiple-choice examination, and clinical assessment. The details of these are available on AMC website, www.amc.org.au. The overseas graduates particularly those coming from India generally do not find difficulty in passing the clinical part of the examination. However, there are usually some problems involved in their language test. Doctors, who come from areas of the country where English is not frequently used as a normal language of communication, are advised to take some additional language courses to equip themselves with better language skills. The Australian Medical Council gives a lot of importance to the language and communication skills of the doctors.

Conditional Registration

There is another subclassification for the doctors who wish to stay permanently in the country, these are known as conditional registrations where a fully trained medical specialist from another country, if he satisfies the Royal College of the surgeons can come and practice in this country provided that his credentials are approved by the appropriate Royal Colleges. However, he or she is restricted to practice only in that particular specialty. What this really means is that if a general surgeon comes under this category under conditional registration, he cannot later on change his mind and go to general practice, or any other areas of medicine. However, those who pass the Australian Medical College Assessment Examination have a greater freedom.

Rural practice.

There are special sponsorship arrangements under the subclass 422 visas for temporary residence or for Regional Sponsored Migration Scheme; RSMS for permanent residence to accommodate the entry

of doctors to work in sole person practices in regional and rural areas of Australia. These are confined to general practice and certain specialties like Obstetrics and Gynecology. These generally do not include other specialties like Pediatric, General Medicine and other branches. More detailed information can be obtained from the website. The details of application process and the types of documents required by the Regional Medical Board are usually on the website.

Each state has its own website and depending upon the area where the doctor wishes to apply, the information can be obtained online. The basic requirements are fairly uniform in all the different states. However, there are some differences and these need to be carefully looked into before an application is made.

Recently, a new requirement has been added, which might not have appeared in the website. Due to the high incidents of false documentation produced by various overseas doctors, Australia now requires all doctors to submit their documents to the Educational Commission for foreign medical graduates international credential services as the first step in registration process. This verification process is mandatory and usually takes a few months. Without the certification the application forms are not entertained. These can be obtained on the website www.ecfmg.org/eics.

My personal view

There was of course a period in the history of India where the facilities for higher medical training were inadequate and it was a common practice for doctors to go abroad to obtain higher qualifications. These opportunities are rapidly reducing. However, the present level of training schemes available for various specialties in India are of very high standard and they are recognized so in various places outside the country and in Australia as well. The main problem, however, is lack of standardization. Overseas organizations are often

unable to distinguish between reputable institutions from those, which are not.

It is now possible for candidates in India to get a very high level of post-graduate training. The desperate desire to go outside the country is not necessary. It is possible for a fully trained specialist to spend a year or two in Australia to broaden the field of experience. This could be a general exposure or in a specific areas of interest. This is generally encouraged and this is an opportunity, which one should seriously look into. The old concept that while we are there, we might as well get an "FRCS or an MRCP" is now not possible and I do not think that these degrees are anymore valid in the present context.

Life style (professional)

The present day medical practice in Australia is based on a multidisciplinary team approach. While there are many advantages in this system, there is a very perceptible blurring of the professional demarcations. Increase specialization in Healthcare, which means that specialist nurses often have a greater knowledge base about certain aspects of patient care than other professionals is one of the important issues. The other factor is the reduction in junior doctors hours on the wards and subsequent delegation of some of the roles to Healthcare professionals, in other words to nurses. It is possible that in the near future the terms doctors and nurses will become obsolete and will include all kinds of people involved in the Healthcare. The blurring of the differences between a consultant and others in the team creates a lot of misconception and disillusionment among the medical profession. The fact that doctors go to medical schools to learn the process that allows them to make differential diagnosis is not often recognized as a qualification, which cannot be acquired by any other short cut methods. Failure to recognize this main expertise has led to a rapid deterioration of confidence amongst these doctors and particularly among the surgeons about their future in the medical

field. As in UK, in Australia the hospital administrations are predominantly taken over by the nursing professionals who have got into the administration through the nursing routes. This has created a lot of problems for the medical specialists. This problem is more acutely felt by the doctors from India, where there is still a clear distinction between the responsibilities of a consultant and others in the team. Overseas doctors need to recognize this phenomenon and have to be mentally and psychologically prepared to work under these conditions.

Australia is a very poor option for fresh graduates who are looking for postgraduate qualifications. Getting into medical schools as private students does not improve the chances. The agencies, which are doing this business in India, are not providing accurate information. Doctors who have already obtained post graduate degrees in India and who wish to spend one or two years to broaden their area of experience would find "Australian Experience" very rewarding.

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d) Job Opportunities in Healthcare in Singapore and Malaysia.

Prof. K.R. Sethuraman.

The market pressures created by demand and supply of healthcare professionals dictate the ease with which one can get a job in health care fields in any country. The same applies to Malaysia and Singapore: In areas of acute shortage of human resource, like nursing, it is easy to get employed in these countries, as the recruitment rules are relaxed to permit foreign workers in..

As a rule, it is better to check out the official website of the health ministry to get to know the prevailing rules and regulations.

Singapore

The Ministry Of Health, Singapore - www.moh.gov.sg

Singapore Medical Council - www.smc.gov.sg/

Ten reasons to choose to work in Singapore, according to the Health Ministry's website are:

1. Dynamic Medical Hub

Internationally, Singapore's current standard of medical practice is ranked amongst the best in the world. Building on our strengths, Singapore is targeting to become Asia's premier medical hub and attract one million foreign patients every year by 2012.

2. World-Class Healthcare Infrastructure

Today, Singapore has many centres of medical excellence. To prepare for further growth, works are already underway to build the new Alexandra Hospital @ Yishun, the Novena medical centre and new specialist centres for cardiology and pathology. New Duke-NUS Graduate Medical started in 2007.

3. Leading Medical Advances & Technology

Over the years, Singapore has made headlines for many 'firsts'. For example, the first in Asia to carry out a combined kidney and bone-marrow transplant and succeed in growing liver cells. With the new Duke-NUS Graduate Medical School and growing pool of medical researchers / academics, the country is set to continue creating leading edge medicine and research breakthroughs.

4. Thriving Medical Research

Besides developing Singapore into a thriving hub for international patients, it is also committed to advancing medical research in the region. Besides proceeding with Phase 2 of Biopolis, was completed in 2007 and the Government has committed funds for the next 5 years to support biomedical research.

5. Expanding Opportunities in Service, Training & Research

Besides healthcare providers, there are currently over 80 healthcare-related companies in Singapore. The growth of these players presents vast opportunities for medical professionals in the areas of patient service, teaching and research.

6. Knowledge Exchange – Hotspot for Medical Professionals

Given central location and connectivity, Singapore is the choice place for international medical conferences and scientific meetings.

7. Multicultural Society

Living in Singapore is a unique experience of diverse cultures, ethnic backgrounds and religions. Singapore's multicultural society of over 4 million is reflected in its major ethnic groups: Chinese, Malays, Indians and Eurasians. Given this diversity, Singapore has long had a tradition of opening its arms to international talent from all corners of the world.

8. Vibrant Garden City

Singapore is an interesting city with something for everyone.

9. Safe Home

Singapore is internationally regarded to be one of the most stable societies in Asia with its long-held emphasis on racial and religious harmony.

10. Affordable Cost of Living

Singapore has one of the lowest income taxes in the world coupled with the provision of quality housing and schools.

Starting your medical practice in Singapore is relatively simple.

First, secure a job with one of the many healthcare institutions in Singapore.

Then, register with Singapore Medical Council (SMC), and

Get accredited by the Specialist Accreditation Board (SAB) if you are a specialist.

Source: International Medical Graduates information

- http://www.moh.gov.sg/mohcorp/careers.aspx?id=260 (accessed on 11-06-2011)]

Medical Registration

There are 4 types of medical registration for doctors who wish to practice in Singapore:

1. Provisional Registration

Allows a local/overseas-trained fresh medical graduate to be employed as a house officer in approved hospitals.

2. Conditional Registration

Allows an overseas-trained doctor (who has completed housemanship) to work in a healthcare establishment, under the

supervision by a fully registered doctor

3. Temporary Registration

Allows an overseas-trained doctor to:

have short attachments at public hospitals for teaching, research or postgraduate study;

conduct lectures etc, as a visiting expert; or

serve in hospitals (in a specific capacity and for a specific period).

4. Full Registration

Allows a local/overseas-trained doctor (who has completed his housemanship) to practice on his own. (*SMC requires an overseas-trained doctor to complete a specified period of conditional registration before full registration.)

When applying to be placed on the SMC's "Register for Medical Practitioners", you should have the following:

A basic degree that is recognised by the SMC (the list of registrable basic medical degrees is available at http://www.smc.gov.sg/html/1153709442948.html); and

A local job offer.

If you are a specialist, you must also apply to be placed on SMC's "Specialist Register" in order to practice as a specialist consultant. To do this, you must first get your specialist qualification/training accredited by the Specialists Accreditation Board (SAB).

Specialist Accreditation

In Singapore, the SAB oversees accreditation for 35 specialties. For a current list of recognized specialties, visit this link: http://www.hpp.moh.gov.sg/SAB/1120458081819.html .

Generally, most overseas specialist training programmes in the US,

UK, Canada and Australia are recognized by SAB. Hence, medical professionals who graduated from these countries should have no problems getting specialist accreditation in Singapore.

Malaysia

Many of the reasons mentioned as reasons to choose Singapore apply to Malaysia as well. Indians may be more comfortable here as the laws are a bit more lax and therefore they may find it more like their home land.

Malaysia has a dual system of Ministerial regulation of Health care education: the service component is regulated by the Ministry of Health, while the education component is regulatd by the Ministry of Higher Education. You may access for details:

(http://www.portal.mohe.gov.my/portal/page/portal/ExtPortal/MOHE_MAIN_PAGE - accessed on 11-06-2011).

Other useful links of Ministry of Health are:

The Ministry Of Health Malaysia (English/Malay versions)
www.moh.gov.my/

Malaysian Medical Council (MMC
http://www.mmc. gov.my/v1/

List of Colleges recognized by MMC
http://mmc.gov.my /v1/doc s/Jadual%20Kedua%2011-02-07_Website%20v2060511.pdf

List of Colleges not recognized by MMC
http://mmc.gov.my/v1/docs/UNSCHEDULED%20UNIVERSITIES.pdf

The process of getting a job is some what similar to that of Singapore. Your provisional employer takes care of all the paperwork to get you an employment pass and a visa.

If your objective is to practice Medicine in Malaysia, you should be registrable by the Malaysian Medical Council (MMC) and apply for registration and practice license. Usually, the hospital authorities who recruit you take care of the paper work related to this. If your basic MBBS is not from a college recognized by MMC, then it is difficult to get a practice license. You may get a special exemption on the basis of postgraduate experience (MRCS, MRCP qualification or academic experience of at least 5 years in "an MMC recognized" college). **Dip NBE has no value here as it is not recognized as a valid PG degree in Malaysia.**

The process of getting a job contract approved by immigration authorities ending in the issue of a single entry visa to enter Malaysia may take 3 to 8 months, at times even longer. So leaving your current job in India is a tricky issue: resign early, and you may be jobless for a few weeks to months; resign late and you may lose validity of the visa.

To conclude, with increasing globalisation of Indian doctors and the recent recognition of Indian degrees in Singapore, there is a significant influx of healthcare professionals in to these two beautiful, peaceful and prosperous nations of South East Asia.

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Section VIII

Miscellany

“Even a stopped clock is right twice a day!"

31

What Students don't learn in the Medical Schools!

Prof. B. M. Hegde

Medical education, not only in India, but also in most parts of the globe does not seem to be in touch with reality vis-à-vis the real life situations. Medical teachers rarely impress upon the future doctors that every disease presents through the personality of the patient. While all the details of the diseases and their management are taught in minute detail, stress is rarely on the kingpin in the drama, the human being that is suffering. Consequently, doctors today view patients as specimens of different diseases and manage them through the test results they obtain from a surfeit of machines at their disposal. Listening to the woes of the hapless sufferer is the most important part of diagnosis and many times that alone gives out the diagnosis and cure even! This essence of bedside medicine is the first casualty in the medical schools.

Hyposkillia-the death of bedside medicine

Paris was in the forefront of new medical awakening and afforded excellent opportunities to ambitious physicians in the eighteenth Century. Taking a cue from Napoleon most physicians promoted themselves as captains of people's destiny. They changed the traditional medical learning from "bookish knowledge and teacher's personal sagacity to putting human bodies before books, prizing the hands-on experience gained through indefatigable bedside examinations and postmortems." Pierre Cabanis (1757-1808) was the father of the golden rule: "read little, see much, do much." In the

milieu one man came out with an ingenious idea of a new instrument to get to know the sounds emanating from the lungs and heart in a novel way out of sheer necessity, which is the mother of all inventions.

Rene Theophile Hyacinthe Laennec (1781-1826) was a physician at the Salpetriere Hospital and later became the chief of Hospital Necker, which afforded him access to thousands of sick people. Laennec devised the first stethoscope in 1816, the leading tool of this new era of objective signs medicine in Paris until the discovery of the X-rays. The first stethoscope was detailed in a 900 page book by him *Traite de l'auscultation mediate (1819)*-Treatise of Mediate Auscultation. This was a single ear wooden instrument, 9 inches long and one and half inches in diameter in two pieces that could be screwed together with separate ear and chest pieces. He wrote "none of the symptoms reported by the patient suffices to characterize disease of the heart and so for a certain diagnosis we must recur to mediate auscultation." One of the leading physicians impressed by this method was William Heberden. Laennec was an expert in interpreting pulmonary signs and could make accurate diagnosis using his stethoscope.[1]

Laennec wrote a treatise on tuberculosis, a classic in its time. Laennec provided the inspiration, instrument, the programme and the techniques for generations of physicians to make better diagnoses. Unfortunately, in the present day hi-tech medical world the great specialists and the divine interventionists seem to have almost forgotten the stethoscope, nay the bedside clinical methods, altogether to the detriment of poor patients. They rely only on the latest scanners and scopes to make their diagnosis. While this is a sad commentary on our present state, thinkers have come out to re-emphasize the importance of bedside medicine. In the west, especially in the US, things have gone too far to the other side that people seem to have forgotten how to listen to their patients' story on

the bedside and how to auscultate. A recent meeting of the American College of Cardiology had one of their great teachers, Proctor Harvey, to give them a key note address on "How to auscultate the heart?"

Bedside medicine, including the use of the stethoscope requires a well-trained physician in the first place. The importance of the quality of the material in between the ear pieces of the stethoscope was beautifully brought our in a tongue-in-cheek poem, *The stethoscope Song, in 1848,* by that great thinker, Oliver Wendell Holmes-an American physician, essayist and poet, who taught anatomy at the Harvard Medical School from 1847 to 1882. He later became a famous poet: [2]

"There was a young man in a Boston town,
He bought him a stethoscope nice and new,
All mounted, finished, and polished down,
With an ivory cap and a stopper too.
It happened a spider within did crawl.
And spun him a web of ample size,
Wherein there chanced one day to fall
A couple of very imprudent flies.
Now being from Paris but recently,
This fine young man would show his skill;
And so they gave him, his hand to try,
A hospital patient extremely ill.
Then out his stethoscope he took,
And on it placed his curious ear;
Mon Dieu! Said he, with a knowing look,
Why here is a sound that's mighty queer!
There is empyema beyond a doubt,
We'll plunge a trocar in his side.

The diagnosis was made out,--
They tapped the patient; so he died.
Then six damsels, slight and frail,
Received this kind young doctor's cares;
They all were getting slim and pale,
And short of breath on mounting stairs.
They all made rhymes with "sighs" and "skies,
And loathed their puddings and buttered rolls,
And dieted much to their friends' surprise,"
On pickles and pencils and chalk and coals.
So fast their hearts did bound,
That frightened insects buzzed more;
So over all their chests he found
The rale sifflant and rale sonore.
He shook his head. There's grave disease,--
I greatly fear you all must die;
A slight postmortem, and if you please,
Surviving friends would gratify.
The six young damsels wept aloud,
Which so prevailed on six young men
That each his honest love avowed,
Whereat they all got well again.
This poor young man was all aghast;
The price of stethoscopes came down;
And so he was reduced at last
To practice in a country town.
Now use your ears, all that you can,
But don't forget to mind your eyes.
Or you may be cheated, like this young man.
By a couple of silly, abnormal flies."

Oliver Wendell Holmes was a great philosopher, in addition. The poem is a nice bit of advice to all the new enthusiasts in every area of medical technology. Just as was the stethoscope the most hi-tech stuff at that time in Paris, so are many of the newer inventions of today in medicine that are being misused and abused by our young men and women like that young man of those days in Paris. Final message is that a well trained doctor that can use his/her faculties correctly will be an asset to patients. Holmes did warn us about the drugs that are used in treatment: "if the whole materia medica could be thrown into the seas, it would be that much good for mankind and that much worse for the fishes," he wrote. How prophetic? Adverse drug reactions did kill more than 140,000 people in one year in the US with a population of 250 million. In addition, 79 million people suffered ADRs as out-patients, which cost the payers a total of $80 billion.[3]

Even the simple blood pressure apparatus invented by Riva Rocci, a hi-tech at the time of its invention, is now known to have caused misery to millions, so beautifully brought out by a great physician of the 20th Century Britain, Richard Asher, in his celebrated book *Talking Sense.*[4] He records that "Riva Rocci must indeed be grieving in his grave at the way his invention is being misused and abused by us today." The present divine interventionists are repeating the same mistake. Werner Forssmann, the young German who thrust the ordinary urinary catheter into his own heart and then on to the pulmonary artery, a great feat at that time when any cathether in the heart was supposed to kill! He must be turning in his grave looking at the way any one with the slightest excuse is being goaded to undergo catheterization by our enthusiastic young interventionists. A recent study did show that the presence of an on site catheterization laboratory in any hospital, where a patient with heart attack gets admitted, is the leading risk factor followed only by hypertension and diabetes, for fatal strokes![5]

"Art" wrote, Henry David Thoreau "is that which makes another

man's day". One kind word on the bedside can cure many ills. The art of medicine is that which should make the patient's day. In fact, the summit of all efforts in the field of medical care delivery is the coming together of two human beings-the one who is ill or imagines to be ill and the other in whom the first has confidence. This is called medical consultation. All else in medicine should really flow from this summit. "Know your patient better than his disease" was the opinion of the father of modern medicine, Hippocrates.[6] Having worked under some of the giants of clinical medicine both in India and abroad, I feel sorry for the patients as also for the doctors of today who think that the hi-tech investigations give them the diagnosis and management strategies.

Hardly anyone *talks with* the patients these days. Most of the big bosses make what they call the "chart rounds" in the ward side rooms where all the details of the patients, including the scanners and X-rays, are kept. Little time is spent on the bedside. The present jargon for good medical practice is "euboxic medicine" where all the right boxes are ticked in the computerized case sheet. Whether the patient feels better or worse is of no consequence. "Patient doing well do not interfere," wrote Sir William Osler, a great clinician of the last Century. "God give me deliverance from-treating suffering human beings as cases, not letting the well alone, and making my interventions worse than his disease," was the daily prayer of Hutchinson. If you talk to a present day sub-specialist, he/she would say that not all those ancient timers had the array of scopes and scanners that we have today!

Recently a double blind, computerized, prospective study was undertaken in London by some of the great teachers in different medical schools there-John Mitchell, John Hampton, Michel Harrison and Carol Seymour, to name a few of them- to study the role of listening to the patient and reading the referral letter from the family doctor vis-à-vis examining the patient physically and

investigating the patient with all the gadgets including the positron emission tomography, in the diagnosis of medical out-patients. These giants were all students of Lord Platt at the University College Hospital London. Platt had written in 1949 that "if one were to listen to the patient long enough, the patient would give away his/her diagnosis." Platt's students, who now have access to all hi-tech stuff, wanted to check the veracity of his statement.[7]

This study was published in the *British Medical Journal.* The study showed, to everyone's delight, that 80% of the accurate final diagnosis and one hundred per cent of the future management strategies could be arrived at, at the end of listening to the patient and reading the referral letter. This could only be refined 4% more by all the physical examinations and only 8% per cent by all the investigations including the PET scanner!

A good lesson for all of us. Stethoscope is no exception. One of the largest studies ever carried out was this study by three generations of cardiology teachers at the St. Andrew's University in Dundee where such greats like Ian Hill taught cardiology. Sixty years of their documented evidence of teaching cardiology to students was audited in this study.[8] The message from this study was that teaching subtleties of clinical bed side signs, like the many heart sounds, clicks, and soft murmurs, splitting of sounds-reverse split included-was highly counter productive. Many a time the teacher's imagination was at the root of this kind of teaching. Gross things are all that one could teach for the students' benefit.

My own observations about the second heart sound splitting at the base of the heart, published in the *Journal of the Royal College of physicians of London,* bears ample testimony to this.[9] Similar experience in the respiratory signs was shown by another study done by a dozen senior teachers of pulmonology. Barring stony dullness, frank bronchial breath sounds, rales and rhonchi, the rest of the signs

were highly unreliable. Therefore, the ubiquitous stethoscope, that is being forgotten, also has to be used with caution, but it is less expensive way of making a diagnosis than all the scanners and scopes put together. The poor stethoscope could give a clue to some rare diagnoses on the bedside, as shown in my study of mitral valve prolapse published in *The Lancet* and later in the *German Tribune*.[10] After all; those scanners only show the shadow. One must remember that a shadow is not the real thing and could change depending on the surroundings like one's own shadows in the morning, noon and evening. I am making a fervent plea for parsimony in the use of any gadget.[11] Nothing, not even the positron emission tomography or the Total Body Scanner, can ever replace a well trained humane bed side clinician with his stethoscope around his neck.

Deep down medical science is very shallow

The conventional research in medical science, better called statistical science, is all redcutionist and is based purely on the bio- medical model of disease. The future predictions based on statistics are unpredictable, full of "butterfly effects."[12] We are trying to medicalise the whole population, if one were to believe that almost 90% of the population, by the age 40, would have at least one "so called" risk factor qualifying for drug intervention. With the kind of drugs at our command the future of humankind looks bleak![13] Intervening in symptomatic patients is a different cup of tea altogether. This difference could only be made on the bedside.

Drug treatment of healthy people with mild hypertension, when viewed differently shows the darker side. The MRC trial of mild hypertension, for example, showed that to save one person from stroke in the future we will have to treat 850 people unnecessarily with drugs![14] One could only imagine the plight of those 850 people taking antihypertensive drugs. Apart from the serious long-term side effects, those drugs also make patients to lose their right to "life,

liberty and pursuit of happiness." The HOT study was stopped prematurely since the death rate in the treated group outnumbered the controls.[15] The arbitrary nature of defining "normality" of blood pressure could be seen in the excellent book "Disease Inventors", by a German, Professor Jerg Blech. The cut off point keeps dropping by the day, naturally to net more and more people under that label. Now even the reading 120/80 is said to be hypertension! We still refuse to believe there is land as we see nothing but sea.

While the physiology of organ function depends on the mean capillary pressure, we do not know what happens to the mean capillary pressure when we reduce the arterial pressure arbitrarily. Some times the raised pressure might even be a compensatory mechanism. The first, and, to my knowledge, the only proof that lowering blood pressure helps is the article published in JAMA in 1967.[16] This was a placebo controlled study. The patient numbers were small. Even among them, a significant percentage of the treated group dropped out because of side effects. Despite this big statistical lacuna, the results were analysed on the intention-to-treat analysis.

There has never been another placebo controlled study for obvious reasons, as we have been selling the idea that it is unethical to leave mild-moderate hypertensives alone with only life style changes, although, by default, the Australian study did show that nearly 40% of the control group did become normotensive on TLC, changed diet, cessation of smoking and alcohol, exercise, weight reduction et cetera. [17, 18] Long-term drug treated and "well controlled" hypertensives showed significantly higher death rate compared to their normotensive cousins in society![19]

Long term follow up of medically intervened healthy people's group showed higher all cause mortality compared to their controls. [20] All these and more would prove Goethe right when he said that " man is absolutely certain when he knows little, with (more) knowledge

doubts increase.". With more knowledge in human physiology, we will have to embrace the science of non-linearity and chaos. Raised cholesterol as an indication for drug treatment in the healthy segment of the populace is another huge hoax in medicine but I need not go into it here as people have already done that earlier. A study of elderly showed that those with the highest cholesterol levels lived the longest.[21]

Unconventional wisdom in medicine

When one enters the medical college the first thing that one is made to learn is to forget one's common sense.[22] This probably happens much earlier in the present educational system; even as early as one enters the primary school. In the practice of bedside medicine, however, common sense is not just common but it is commoner than what one thinks it is. The statistical science of medicine can, at best, manage to size up cohorts of people but never the individual patient on the bed![22] It is the past experience of the doctor with his clinical acumen that helps him at that point in time. He has to take a spot decision one way or the other based on his own assessment. None of the entry criteria of the "so called" research studies helps one at that time, as no two individuals are alike in real life. Unfortunately, that is what is presumed in the science of medicine.

The art of medicine is the one that makes the patient's day. No amount of science and technology will ever be able to replace that humane human being, the doctor that alone could put to rest the universal anxiety that is part of all illnesses since every disease presents through the personality of the patient. Every doctor should become a healer with a heart full of compassion for the ill. The role of the science of medicine is only to sharpen the intellect of the doctor on the bedside. How good is good medical science? While the science of medicine is only a statistical science, and not an absolute science like mathematics, one needs to be careful in accepting all that is sold these

days as scientific medicine.[23] In reality even mathematics becomes shaky. In so far as mathematics is certain it is far removed from reality and when it is closer to reality it is not certain![24] Medical science has one more drawback.

Science, in reality, is simply making models, mathematical constructs, which with verbal jargon, are supposed to work! So far so good. When such a science is applied to a dynamic human being that is being continuously run with food and oxygen, the linear laws do not seem to work. Human body is not only non-linear it follows the holistic rules of the universe. Human beings are heavily dependent on their environment, in addition. All these make the present medical science a square plug in a round hole.[25] Change is progress and if we want to progress in medical science we have to think deeply of changing our mind set and follow the new science of chaos-of non-linearity and holism. Change is not easy, though. Human beings are basically status quoists wanting the comfort of the existing order. We are usually afraid of change and what it might bring in its wake. But life itself is ceaseless change till death. Hence there is a need for serious thinking here. Let me think with you, the reader.

Let us examine the science of the very foundation of medicine, sold as the gold standard in medical research, the randomized controlled trials (RCTs). The British claim that it was Archie Cochrane that introduced the term and they claim that the first such study was undertaken by their Medical Research Council in 1940 of the role of streptomycin in tuberculosis and on the role of the whooping cough vaccine. However, there was a very good RCT done in Germany by Roethlisberger and Dixon in 1939 on the role of streptomycin in tuberculosis. There are indications that similar RCTs were conducted by R.A.Fisher in 1926 in agricultural sciences.[26]

Let us examine the definition of RCTs. "A carefully and ethically designed experiment which includes the provision of adequate and

appropriate controls by a process of randomization so that precisely framed questions can be answered." RCTs did a good job in the arena of infectious diseases where the results could be got at the end of the study despite the study's inbuilt drawbacks. However, in our enthusiasm, we have extrapolated those designs for the study of treatment of risk factors like "raised BP, cholesterol and, sugar in the apparently healthy section of the population where the results are not seen at the end of five years study anyway. Then we use the statistical power to predict the future with our results of the RCTs. Here is the problem.

When one has a control population, the same must be identical to the study cohort for the results to be reliable. No two human beings are identical anyway. To cap it, we can only measure a few phenotypic features of both the groups for comparison. These, by any stretch of imagination, could not be taken to match the two groups. Despite this, the RCTs could do a good job in infectious diseases where the results are there to see at the end of the study. Time evolution in the human system being non-linear and solely dependent on all the parameters of the initial state, the mind and the genes included, RCTs could only deliver doubtful answers to the questions posed at the beginning. If we compare this with the definition given above it becomes clear that all is not well in this filed. That would shake the whole edifice of medical science as the foundation is built only with dry sand. How does randomization compensate for our lack of knowledge of the whole of the initial state of the human organism in the study is something that has no answer.[27]

Be that as it may, modern medicine could, at best, reach only a minority in this world. Large sections of the population live without the benefit of modern medicine. They also fall sick and they have their own remedies that have not gone through the "rigors" of the RCTs. We must not close our eyes to the possibility that there could be authentic methods in other systems as well that might help us unravel

the mystery. Our ostrich like attitude denies the ardent student in the medical school even a remote chance to think about it. One could argue that only modern medicine is scientific and the rest is mumbo-jumbo. Then modern medicine's audit should show that. The Institute of Medicine audit in the US has shown medical interventions in bad light.[28] The per capita death rate of the grievously injured in the Vietnam War, where hi-tech modern medicine was at hand in Saigon, was slightly worse than the results of Falkland's War, where the British did not have those facilities close at hand! Cancer audits before and after modern medicine do not show much to write home about, either! Cancer therapy, bypass surgeries, angioplasties, stem cell transplants, genetic engineering, treatment of chronic illnesses, terminal care in the intensive therapy units and, even, assisted delivery in high risk pregnancies do not seem to set the River Ganges on fire.[29]

The best of these is the pioneering studies of Prof. David Eddy of Stanford University, a cardiac surgeon turned mathematician, who, with his ten years of painstaking research, has invented a new soft ware tool that has thousands of differential equations to test the efficacy of what we do in medical science arena in a virtual field, named ARCHIMEDES. His studies have belied most, if not all, of our RCT conclusions. (david.eddy@archimedesmodel.com) This has opened up a new vista for others to follow. Our own studies for the last quarter of a century of the non- linear functioning of the heart using Heart Rate Variability (HRT) have thrown up newer possibilities for diagnosing and prognosticating heart diseases.[30] We have been working on the non linear wavelet analysis of the conventional ECG using the Continuous Wavelet Transform patterns. The Whole Person Healing Group, a collection of humane scientists lead by Prof. Rustom Roy, the father of nano-technology, a distinguished professor at the Penn. State University, based in Washington DC, is doing phenomenal work in authenticating alternate methods in the arena of

healing sciences.[31] The linear thinking in medical sciences with the reductionist attitude does not seem to support the belief that modern medical research is perfect. Far from it, very far. Time has come to think of good alternatives for which there is no dearth. We only have to change our attitude to those methods and we could always use our modern scientific methods to evaluate their efficacy and then accept or reject rather than prejudging their capacity. In my long experience it is the young student in the medical school, given the freedom to think, that would come up with exciting new possibilities. In my considered opinion teaching is a more effective way of learning and our students are our best stimulators provided both of us remain humble and open to correction. Many effective systems of health care have been in existence for "times out of mind" in this world long before the "so called" scientific medicine came on the scene.[32]11 It is high time that thinkers among the medical leaders, a rare breed indeed, start to look at the alternatives critically for the common good.

We have the power to verify their claims and then choose the wheat from the chaff. Efforts are on to do just that and we hope to let the world know that there are alternatives which could complement the good things in modern medicine. One good example in modern medicine is emergency care which can not be replaced by any of the existing alternatives. That said, I must add that even in that area much needs to be refined as many of our interventions seem to be counter productive there. That is for another occasion. This paper does not permit me to go into that area. However, the majority of minor illness syndromes that form the bulk of illnesses on a given day, and the chronic ailments and cancer need some new approach in place of the top-heavy reductionist modern system. We need a holistic system of medical care which also takes into consideration the human mind as the initiator and healer of most illnesses.[33] Let us move from the linear reductionist curative science to the holistic non- linear healing science.

Doctors are fallible

Medical education does not stress that doctors are as human as any one else is and are as fallible as others are. This creates an impression of omni potency in the mind of the young medico when s/he thinks that they could get away with anything. This is where the consumer lawsuits are making money. They make doctors' life miserable and medicine consequently becomes prohibitively expensive. Medical information is updated at a rate of 7% per month. Most of this is not worth knowing and some of it is downright useless, but the conscientious practising doctor would find it difficult to practise medicine without feeling guilty. The claims of heroic surgical feats and the role of wonder drugs being touted every day compound this dilemma. Most of these are not properly audited. How does one get some guidance in this jungle of confusion? That is the million-dollar question.[34]

Ever since medicine was accepted as a science in the European Universities in the twelfth century, medicine has been using the methods of natural sciences including the use of linear mathematics. This has resulted in "doctors predicting the unpredictable," as the dynamic human body only follows non-linear mathematics in time evolution.[35] Although natural sciences have learnt a lot from modern quantum physics, medicine did not follow suit, to understand human consciousness that critically guides human health and illnesses.[36] All these factors have compounded the mistakes in applying technology to medicine without proper audit.

Starting with some of the audits just completed, we could move on to other areas. Many of the unmeasured physiologic effects of indwelling catheters come to mind first. The Swan-Ganz catheter was introduced without appropriate validating studies to compare with identical groups without the catheter. This catheter by itself could be an adverse factor for many critically ill patients.[37] In an observational

study Connors and colleagues showed that in critically ill patients, after adjusting for selection bias, the catheter was associated with increased mortality and increased utilization of resources.[38] The authors suggested a prospective randomized study. Extrapolating another study done in Worcester, Robin estimated that around 15,000 unnecessary deaths could have occurred in the year 1984 alone and his paper goes on to estimate a total of nearly 100,000 excess deaths in the USA since 1975 due to the catheter.[39] Following those studies there was a justifiable demand for a moratorium on the use of the catheter until further prospective controlled studies clear the mist. Understandably, there were strong opinions expressed against the demand for a moratorium, but the opinions, unfortunately, ignored some of the very valid data in the field.[40]

Coronary artery surgery is the next popular surgical procedure crying for proper audit. There was a demand for audit in this area way back in the early 1970s, indeed all new surgical procedures be better audited by controlled studies before being routinely performed in practice.[41] There was hardly any substantial change in this area even as recently as 1997. [42] A well planned, prospective second opinion study of the need for bypass grafting showed that there is a major overuse of this procedure even in the best centres in the US.[43] More recently an audit showed ethically unacceptable results of overuse of both bypass and angioplasty in the immediate post myocardial infarction scenario.[44]

Writing a very balanced editorial in the same issue, Harlan Krumholz from Yale University laments: "In a fee-for-service system, cardiac procedures generated billions of dollars in revenues each year. A high volume of procedures brought prestige and financial rewards to hospitals, physicians, and the vendors of medical equipment. In this environment, the US health care system rapidly produced and expanded the capacity to perform cardiac procedures and training....This increased capacity may also have fuelled demand for procedures." [45]

This menace is spreading to other countries, more so to the developing countries in a big way where auditing is non-existent. Earlier there was a plea for cutting cardiac surgical centres in the UK by a thinking cardiac surgeon.[46] Journal editors could do a lot to avoid cognitive errors in data presentation as shown by this review of 60,000 bypass grafts in the US. While the original study said that everyone that undergoes an early bypass graft has an average increase in life expectancy of 4.26 extra months; [47] the truth of the matter when properly presented was that 6% of patients gained extra life of 3.5 years from early surgery, 4% gained 1.5 years and the bulk of 84% had no change at all.[48]

This brings us to the crucial question if this kind of publications are done and researchers hired only to sell academic medicine in the market! [49] To cap it, bypass surgery of the coronary arteries is associated with adverse effects on the brain. Stroke, that occurs from 1.5 to 5.2 per cent of patients undergoing this procedure according to various prospective studies, post-operative delirium, short term cognitive changes and, in many cases, long term permanent cognitive changes make it imperative that the operation is done only in rare cases for relief of intractable angina and/or for stabilizing ventricular function.[50] Poor medical research might be due to the vested interests enticing researchers with gifts and other allurements.[51,52]

There is nothing much to write home about the outcomes of another related procedure, angioplasty. Whereas there are small studies eulogizing its benefits, enough audit data do not show the procedure in very good light.[53]. Renal angioplasty is no better than anti-hypertensive therapy, although sold as the best for the former.[54] Another area that has not been audited is the routine check up (screening) of apparently healthy individuals. While it is true that doctors and technology could do a lot for the hapless victims of illnesses, there is no solid proof that our interference at the so-called

"early asymptomatic " stage of diseases could control them better and also prevent further damage. Human body's wisdom tries to do the necessary changes when things go wrong anywhere in the body. Only when this body's defense fails does a patient get symptoms. That is where our intervention would help.

An audit of multi-factorial, long-term preventive strategies to prevent cardiovascular diseases showed that at the end of fifteen years of observation, there were significantly excess cardiac deaths in the intervened group as compared to the controls.[55] Screening for congenital hypothyroidism, breast cancer, and Down's syndrome had shown false positives to have permanently damaged the health of the screenees. Sick absenteeism increased significantly after the work place hypertension screening was started. Similar results came from some of the cholesterol check up programmes. In addition, people who get negative results on screening are shown to ignore health precautions. In Australia, this has resulted in higher episodes of illness. More studies are needed before launching wholesale screening programmes.[56]

However, this practice is spreading like wild fire all over the world since it makes lot of business sense to tell the world that we could do a lot to all the well people, as we would then be targeting a huge population with this false claim! The menace of technology is taking a heavy toll on the health budgets of poorer countries, since medical students are taught to be totally dependent on technology for diagnosis. A recent audit of the diagnostic methods did show that 80% of the final accurate diagnosis and one hundred percent of the future management strategies could be deduced at the end of reading the referral letter and listening to the patient. It could only be improved 4% by all the examinations and 8% more after all the tests, including positron emission tomography, are done.[57]

Medical education seems to be run mainly with the money from drug

companies and technology manufacturers.[58] Research data are many times twisted out of shape to help sell drugs and technology making life miserable for patients and, possibly increasing mortality. Most studies are subject to interpretation bias as shown elegantly by the now infamous UKPDS data. This study does not show any benefit on macro-vascular end points in patients with type 2 diabetes treated with insulin and sulphanylureas. Nevertheless, many authors, editors and the wider doctors' community interpreted this very study as providing evidence of benefit of intensive blood glucose control.[59]

The story of HOT study for tighter control of blood pressure is another pathetic story in this regard. While the study was stopped prematurely as there were higher deaths in the tightly controlled group with more powerful modern drugs, the study results were sold as showing benefit to patients with these drugs. Although many patients dropped out of the study in the beginning, the study was eventually analyzed by using the intention-to-treat analysis. Fundamental objectives of the HOT study remain to be achieved.[60] Treated hypertensives had impaired mortality compared to their normotensive cousins, which becomes apparent after a decade of follow up showing that all is not well with antihypertensive treatment the way it is done these days.[61] None of these findings either reach the practising doctor or even the text books, but the twisted version reaches, through the glossy company literature, every practitioner long before the study gets published!

All this has created enough and more damage to the medical profession. There needs to be a fundamental change in medical education to make the new doctors to think for themselves before accepting published data unquestioningly. We should provide students with all the facilities to learn for themselves rather than trying to teach them. Shocking revelation that in USA around 100,000 people die every year due to medical errors makes one to think if we are on the right track or not. The numbers could be much higher in

some of the developing countries.[62] *Medical education should not exist to provide doctors with an opportunity to earn a living, but it should exist only to improve the health of the public.*

Future Course

Value based medical education, preferably in the community, would solve some of the problems, like over-investigation and over-treatment that result in many Ulysses syndromes. Rather, teaching in the hi-tech set up should be discouraged to make the doctor-patient relationship the sheet anchor of medical care delivery. Medical students should have lessons in medical humanism, which includes insight into the real health problems and their solutions. Research must be better regulated. Financial interests of the researchers need to be carefully assessed before publishing their data. Time is now ripe for openness in research.

The profession, before being advertised to the gullible public, should evaluate newer heroic surgical feats that bring in fame, money and status to doctors, hospitals and the manufacturers of equipment. Deportation of the physician under the most draconian law in South Africa, in the much-publicized first heart transplant, for refusing to declare the donor brain dead, is a glaring example of what happens behind the scenes in such situations. We need stricter control over these heroic procedures where the real hero is the patient who offers himself for the procedure unaware of its implications and hazards. Interventions could be audited, like drugs, by controlled studies. Many new techniques had resulted in mortality and morbidity in the past: they are too many to enumerate! Most of them have been swept under the carpet.

Medicine revolves round anxiety-patient anxiety of disability and death and doctor anxiety of having done enough of the right thing or not. If something could be done to allay both these, we will have progressed in the right direction. This again is to be done on the

bedside. Doctor's dilemma that causes so much of stress related diseases among doctors goes unnoticed to the detriment of patients and the public. This has to be urgently addressed by the profession as also the powers-that-be. This is not a small matter. Hope sanity will prevail and medical education gets suitably modified with special stress on continued rounded professional development.

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32

The Dying Art of Clinical Examination

Dr. H.V. Srinivas

The title of this book is "What is not taught in Medical Colleges." It looks preposterous on my part to write this article on clinical medicine, as it is taken for granted that clinical medicine is taught methodically, always There lies the problem: yes it is taken for granted, like many things in life are taken for granted but never done! With never ending pressure on time, doctors look for a short cut and the feeling that investigations are a shortcut to diagnosis is all too pervasive. Clinical teaching is an art, some are gifted and many have cultivated it out of passion for teaching and commitment. When the high-tech investigations were not available the practice of medicine consisted of patient listening to the patients' problems, empathize and sympathize with patients with placebo medicines. A good doctor patient relationship was established; this reduced pain and suffering and instilled confidence and helped many. Even today almost 30% of illnesses are all stress related requiring this approach.

However, today the scenario is changing. The patient troops into consulting room with a large bundle of investigations and talks not of his symptoms but of diagnosis. For instance like this: *"Doctor, I have a coronary block..."*, or *"there is a disc prolapse in cervical region...."* etc. The doctor has no time for clinical analysis as he has to go through the number of investigations and also answer the long list of questions which patients have prepared by browsing the internet!

In earlier days, the concept was, 80% diagnosis is made from the history, 15% from physical examination, 2.5% from routine

investigations and remaining 2.5% from sophisticated investigations. This is still valid even today. However with misplaced enthusiasm the information derived from hi-tech investigations are used to make 100% diagnosis! I go to the extent of saying that careful clinical

examination has become more important and relevant today, to interpret various informative data gathered from the host of advanced investigations. If this is not done, wrong diagnosis leading to unnecessary or hazardous treatment may be offered. It is time to revive the art of clinical examination! The following examples will testify this statement. The examples are neurology cases as I am a neurologist. But the principles are equally applicable across all specialties in medicine and surgery.

I see frequently patients in the age group of 50+ who complain of "giddiness." of long standing duration, where most routine investigations are normal. Some one does Carotid Doppler study and there is 60-70% of narrowing and advice stenting /surgery to "cure giddiness." The person who is advocating this has no knowledge of as how stenosis of carotid artery can produce giddiness. It is just an assumption. The result is an unnecessary intervention and expensive treatment and in the end the symptoms of giddiness does not decrease. In this instance, the basics of clinical medicine/ neurology have been sidelined and 100% faith is on the high tech investigations. Whether the carotid stenosis is the cause of the problem is a clinical decision.

When I was trained in neurology a good part of time was spent with patients and learnt critical analysis of case history and physical findings. We did not have means to confirm the diagnosis. Today the technology has provided the evidence to confirm the diagnosis. For example, if a diagnosis of cervical myelopathy due to intrinsic cord lesion was done, in the pre scan era, it was not possible to confirm this. But today with MR scans one can see the anatomical details of the spinal cord and confirm the diagnosis. However, the onus still lies

on the clinician to interpret the investigations to arrive at a diagnosis.

To illustrate - a man aged 55 years had pain in the right upper limb and neck and difficulty to walk because of stiffness in right lower limb. The general practitioner got an MR of the cervical spine done; this showed a disc prolapse at C5-6 and directly referred to a surgeon. The surgeon looked at the scan and recommended surgery. Even after surgery the symptoms did not improve. Over a period of time not only did the pain continue but also deteriorated. Clinical examination at this stage revealed that rigidity of right upper and lower limbs was responsible for his pain; this was due to right Hemiparkinson's disease. Of course, he did not have tremors. The old clinical dictum to differentiate between rigidity and spasticity is long forgotten; leading to unnecessary surgery. This patient made a dramatic recovery with appropriate medical treatment of Parkinson disease. This is yet another example where clinical examination outscores the investigations.

There are many myths and fallacies about neurology –

Myth 1 - It is commonly believed the neurology is a very difficult subject to understand.

The fact is neurological diagnosis is almost like mathematics where one can deduce the diagnosis by following methodical steps with appropriate anatomical localization.

Myth 2 - Most neurological diagnosis require high - tech investigations.

The fact is most common disorders like epilepsy, migraine, tension headache, Parkinson disease, other movement disorders and dementia are conditions which can be diagnosed bt clinical examination. Even stroke in first 24 hrs is clinically diagnosed as CT may be normal in first 24 hrs. Investigations are useful for

establishing causative pathology.

Myth 3 - Investigations would, any how, reveal the diagnosis - EEG will diagnose epilepsy / EMG – neuropathies / and MR scan whatever the patient has, prolapsed disc or not.

Wrong. No investigation can diagnose on its own. Investigations are supportive of clinical diagnosis.

Myth 4 - What is the use of doing all the analysis? Any how most of the illnesses have no treatment!

The fact is even with the high profile subject like cardiology, there are limitations for treatment. Whatever be the cause, there are only few interventions possible in cardiology. For instance, whatever be the cause, treatment of congestive cardiac failure is the same. There are many treatable neurological disorders today, a bulk of them neurological infections – like Tuberculosis, Cryptococcus, Toxoplasmosis, fungal disorders etc., all of which can be diagnosed by modern technology. There has been a relentless addition of new drug for the management of common neurological problems like migraine, Parkinson disease and dementia. Many surgical techniques have further added to the treatment regime of medical disorders (for example: Parkinson disease, epilepsy, etc.). In addition, surgical procedures for brain and spinal cord have undergone considerable refinement. In short there are more treatable disorders in neurology than cardiology!

There is nothing wrong in the high tech investigations, but it must be remembered that they cannot replace the human brain for clinical analysis. Atleast not as yet – with increasing techniques we are now able to see many incidental findings in imaging (CT / MRI) such as - lacunar infarcts, brain atrophy, small calcified granuloma, small cysts, narrowing of blood vessels, disc prolapse in cervical and lumbar region. Unless there are clinical correlates these findings have no relevance.

The clinician has the greatest advantage of - seeing the patient in person, obtaining the history, progress of illness, physical examination findings, response to treatment and a list of laboratory, radiological and other investigations are at his disposal, to arrive at diagnosis. Final diagnosis may not always be possible by mere laboratory / radiological findings.

To illustrate further - a school going child while standing in a prayer meeting fell down unconscious with stiffness of limbs – regaining consciousness almost immediately. A clinical diagnosis should have been postural syncope, where stiffness and even a few jerks may be observed. However, the primary care physician instead of getting a clinical opinion referred directly to a diagnostic setup for an EEG. The EEG showed non-specific abnormalities (like ECG showing nonspecific ST-T changes). Neurologist interpreted the EEG (without any history or seeing the patient) gave a technical report mentioning *"a few sharp wave discharges"*. The treating physician interprets this as *"evidence for epilepsy."* The child was put on long tern anti epileptic drugs. More important was the mental anguish the parents of that child had to go through – with all its attendant social implications of having an epileptic child. Once again it is no fault of the EEG report, but what is observed in EEG has to be properly correlated with history, clinical findings etc. Here lies the importance of clinical examination. It is the responsibility of the attending clinician. It is estimated that almost 20% of persons with epilepsy on treatment, infact, are wrongly diagnosed and do not have epilepsy!

A 50 year old lady was brought in with a history of progressive difficulty to walk and get up from squatting position due to pain the in the low back for which an MR scan was done; this showed some degree of L 4-5 disc prolapse, not enough to explain the problem. Over the next 3 months ~~not only~~ the pain and difficulty in walking worsened, and in addition, the patient complained pain in the neck and shoulder with difficulty in performing the daily activities like

combing ~~of~~ hair. An MR of cervical spine was non-contributory. At this time an MR of thoracic spine was also done. As the symptoms progressed, she was referred for a neurological consultation. Her examination revealed proximal muscle weakness of lower and upper limbs with painful muscles. The clinical diagnosis was chronic polymyositis. The relative of the patient who is himself a doctor brought out a bunch of investigations – including, MR-Cervical, thoracic, lumbar spine and also MR of brain. When the consultant neurologist asked why MR of brain was done, the reply was "... *to complete the neurological investigations!"*) The important and relevant investigation – CPK – was obviously not done as no clinical diagnosis was arrived at. Subsequently, the final diagnosis was Chronic polymyositis proved by elevated CPK levels, ENMG and muscle biopsy. The patient responded dramatically with steroids with disappearance of pain & improved motor power.

The above examples strongly testify the premise that clinical examination today is not dead, but is very much needed. Doctors must hone their clinical skills, and not become slaves of modern investigations. Investigations should only be used as adjuncts to proper and thorough clinical examination

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33

Medical Jurisprudence: Law and its Application in Medical Practice

Dr. G. D. Ravindran

Whether we like it or not; as doctors, we are often involved with the law. We have studied Forensic Medicine during our undergraduate days. As practicing physicians we need a practical knowledge about law and its application in practice.

Introduction

Definition of law: Laws have been defined as a set of rules that are recognized and enforced by the courts when they administer justice. A rule is applied by an organization.

Legal System: A legal system consists of the following:

A set of basic principles and values accepted by the society (constitution).

A set of operational norms set out by the laws, for example, - Criminal procedure code etc.

Institutional structures to enforce the laws, for example, - Police

A cadre of personnel (legal) to administer the law, for example, - Judges and lawyers.

Types of law: There are different types of laws. They can be classified depending upon their source and the parties involved.

Source of law: Depending upon the source of law, the laws can be classified into

Statutory Laws.

Common Laws.

Customary Laws.

Statutory laws are laws that are made by the parliament and the legislature. They are written down and are stated. The law making bodies paint a broad canvas of the problems and rules. They cannot imagine all the possible situations and form rules. In a dispute the courts deliberate the findings and interpret these laws. They deliver judgments.

The judgments delivered by the Courts are the basis of the common law. E.g. the consumer protection act only stated that if there is a deficiency of service then that agency is liable to be included under the consumer protection act. The Supreme Court interpreted this act in IMA vs. Shantha case to make the medical profession liable under this act. Common laws are effective as long as they are reinterpreted by a higher judiciary in a different manner.

Customary laws are laws that are followed by a custom. For a practice to be considered as a customary law, the practice should be followed by all members of the profession. It should be consistent with the constitution as well as must be in line with the human rights as well as with other laws of the country.

Criminal and Civil Law: Depending upon the parties who institute a case, the laws can be classified as criminal or civil case.

In a criminal case, the prosecutor is the state. The offences must be covered under the criminal procedure code.

Civil laws are laws that govern affairs that are not covered by criminal procedures. The contesting parties may be between individuals or individuals against the state.

Making of a law: Laws are made by the legislature. The government

or a member introduces a set of laws on a particular subject in the lower or upper house (legislature). This is known as a bill. The bill is discussed by the house. This is known as the first reading and if needed it may be sent to a select committee. The committee will modify the bill and refer it back to the house. The bill is again discussed and if amendments are necessary they are made. Then the bill has to be passed by the house. It is then placed in the other house and the bill is passed. After it has been passed by both the houses the bill is placed before the President or The Governor of the state for assent. Once the bill is signed by the president, the bill has to be notified in the gazette.

The gazette notification will mention the title of the bill. The date from when the bill will become the law and also the jurisdiction of the law. All the provisions of the law will be given. Only when the bill is notified in the gazette, it becomes a law form the day it has been notified.

Codes: Codes are written by people in authority and organizations. They act like a road map. It tells you the way to go. It prescribes the behaviour that is acceptable. It also prohibits undesirable behaviour. Medical profession is governed by Code of Medical Ethics of the Medical Council of India 2006. In 2009 an amendment was introduced on gifts to doctors. The codes set the standard of practice. Courts will use the code to decide the standard of practice. The code has also been gazetted. Hence code acts as a law for doctors who are registered with the medical council of India.

Guidelines: Guidelines are directions given by a learned body on a particular topic.

Codes and guidelines act as a standard of practice. Courts will use these to decide on the mattes of negligence. In India the code of medical ethics has been gazetted in the Government Gazette. As a result the codes can be considered as medical laws.

Laws are like perimeter as long as one is within the perimeter the person is safe. When a person crosses this boundary, he will be punished. Ethics is a moral code. Ethics act as a map and direct proper behaviour.

All laws need not be ethical. For example, Apartheid laws in South Africa were legal. Failure to obey those laws entitled punishment. We all know that these laws were not ethical as they interfered with human rights and were discriminatory. Conversely sometimes what is considered as ethical may not have a law.

This article will deals with jurisprudence to may be useful to medical practitioner*s*.

Health Laws

Laws enacted in relation to health are known as health laws. Laws can protect a healthy person from becoming sick. A sick person can be protected from harm but it cannot cure a sick person.

Examples of laws that deal with health can be grouped into

Laws governing the qualifications / practice and conduct of professionals:

- Indian medical council Act 1956. Dentists Act, etc.
- Indian Medical Council (professional conduct, etiquette and ethics) Regulations, 2002

Law governing management of patients:

- Drugs and Magic Remedies (objectionable) Advertisements Act 1954.
- Pre conception and prenatal diagnostic techniques (prohibition of sex selection) Rules, 1996. Medical Termination of Pregnancy (MTP Act 1997), MTP Rules 1971.
- Transplantation of human organ Act 1994.Transplantation of human organ Rule.

- The Epidemic Disease Act 1897.
- The Mental Health Act 1987. National guidelines for clinical management of HIV / AIDS, NACO, Government of India. Manual for control of hospital associated infections: SOPs, NACO, Government of India.

Law governing Biomedical Research.

- Breeding of and Experiments on Animals (Control and Supervision) Amendment Rules, 2005.

Law governing the safety of patients, public and staff within the hospital premises and environmental protection:

- Biomedical Medical Waste Management Handling Rules 1998 (Amended on 2000)

Law related to governing the commissioning of hospital:

- Clinical Establishments Bill, 2010.
- Companies Act 1956.
- Atomic energy regulatory body approval for radiology / nuclear medicine services under the atomic energy Act 1962.

Law governing storage / sale of drugs and safe medication: ? Drugs and cosmetic Act 1940. Drug and Cosmetic Act amendment 1982,

- Narcotics and Psychotropic Substances Act, 1985.
- Blood bank regulations under Drugs and cosmetic (2nd amendment) rules, 1999.

Law governing medico legal aspects:

- Law of Privileged Communications
- Indian Evidence act (disclosure of privileged / confidential patient related information before a court of law – under protest.

- Consumer Protection Act 1986.

Laws governing the employment of manpower:

- Employees Provident Fund and Miscellaneous provision Act 1952.
- Employee State Insurance Act 1948.
- Persons with Disabilities (Equal Opportunities, protection of Rights and Full Participation) Act, 1995.
- Karnataka Prohibition of Violence against Medicare Service Personnel and Damage to Property in Medicare Service Institutions Act, 2009.
- Information Technology (Amendment) Act, 2008. Information Technology Act, 2000

Regulations governing the business aspects of hospital:

- Charitable and Religious Trust Act 1920. Contract Act, 1982.
- Income Tax Act 1961.
- Customs Act 1962.
- Foreign Exchange management Act 1999. Insurance Act 1938.

The discussion of all these acts will not be possible in this article. However, the article will discuss some of the case laws that have a bearing on medical care.

Case Laws

We will explore some case laws that have impacted medical practice in the country recently.

In a land mark judgment in *IMA vs. Shantha V.P.,* the Supreme Court made the medical profession liable under the consumer protection Act. Since then numerous cases have been filed in the consumer courts in the country.

In *Paschim Banga Khet Mazdoor Samithi vs. the State of West Bengal*, the Supreme Court directed that all hospitals and medical practitioners have a duty to provide emergency treatment.

Consent

In the recent years the Supreme Court has given directions on consent in medical cases. In *Samira Kohli Vs Dr. Prabha Manchanda*, the Supreme Court enunciated five principles for the obtaining consent

I. A doctor has to seek and secure the consent of the patient before commencing a treatment (treatment includes surgery also).The consent so obtained should be real and valid which means that

A patient should have capacity and competence to consent

Consent should be voluntary

Consent should be on the basis of adequate information concerning the nature of the treatment or procedure, so that patient knows what he/she is consenting to.

ii. The 'adequate information' to be furnished by the doctor (or a member of his team who treats the patient), should enable the patient to make a balanced judgment as to whether he should submit himself to a particular treatment or not. This means that the doctor should disclose nature and procedure of treatment and its purpose Alternatives if any An outline of substantial risks and adverse consequences But there is no need to explain remote or theoretical risk A balance needs to be achieved between the adequate information at the same time of frightening the patient and so that the patient can make the decision.

iii. Consent given for a diagnostic procedure should not be used for doing a therapeutic procedure. Consent given for a specific procedure should not be used for another procedure. The

exception to this rule is only where there is a life threatening situation and it is unreasonable to delay the procedure. Performing additional surgery to save time and expenses or to relieve pain and suffering in future cannot be used to defend one's action.

iv. A common consent for diagnostic and therapeutic procedure during a particular surgical procedure and an additional surgical procedure that may be necessary during the procedure is permitted.

v. The amount of information, Bolam test, is sufficient. Bolam test states that the amount of information is the amount of information an ordinary person with the requisite experience will tell the patient. The courts in India should move towards Canterbury level. Canterbury test states that all relevant information that is necessary to form an informed decision has to be provided to the patient. Canterbury standard is used while obtaining consent in research. The Court also expressed the desire to see that information that will be provided to the patient in a clinical setting will be reaching the Canterbury level.

These directions have to be followed by all medical practitioners.

Arrest of Doctors due to negligence

Another problem that medical practitioners face is a frequent harassment by the public and the police. Often it is due to anger by the relatives of the patient. Police have sometimes indiscriminately arrested doctors.

The courts have been forefront in protecting the health care workers. The Supreme Court judgment in *Suresh Gupta v. Govt. of NCT of Delhi*, stated that the police will have to be first provide proof of "recklessness and deliberate wrongdoing" on the doctor's part.

In another case, *Jacob Mathew vs. State of Punjab*, the Supreme Court has ruled that doctors should not be held criminally responsible

unless there is prime facie evidence before the Court in the form of a credible opinion from another competent doctor, preferably a Government doctor in the same field of medicine supporting the charges of a rash and negligent act. Based on prima facie evidence as given by the complaint the investigating officer should obtain an independent and competent medical opinion. Unless arrest is necessary for furthering the investigation the arrest may be withheld. The Supreme Court has time and again reaffirmed that the mere death of a patient does not amount to medical negligence. It said that "Criminal prosecution of doctors without adequate medical opinion pointing to their guilt would be doing a disservice to the community", and continued "...if courts were to impose criminal liability on hospitals and doctors for everything that goes wrong, doctors would be more worried about their own safety than giving the best treatment to patients." What is expected of a doctor is that he possesses requisite skill and he will use them with reasonable competence.

Many state legislatures have enacted laws to protect the medical professional. The Karnataka legislature enacted the 'The Karnataka prohibition of violence against Medicare service personnel and damage to property in Medicare service institutions act, 2009'. Under this act any violence against Medicare service personnel or damage to property in a Medicare service institution is prohibited. It is a cognizable and non-bailable offence. A person can be punished with imprisonment for a period of three years with fine which may extend to fifty thousand rupees. In addition to the punishment specified in section 4, the offender shall also be liable to a penalty of twice the amount of purchase price of medical equipment damaged and loss caused to the property as determined by the Court trying the offender. If the fine is not paid, the court can order the recovery of the amount through the provisions of the Karnataka Land Revenue Act.

In cases of negligence, the courts tend to use the Bolam test for judging the standard of care. It is the standard of care that of an

ordinary competent person exercising ordinary skill in that profession.

Medico- legal work

In a recent judgment the Punjab and Haryana High Court has made some remarks with regards to medico legal work. It stated that "*In a medico-legal case, the doctor on duty, who admits the patient, shall prepare the medico-legal report.... The doctors serving in the government hospitals are bound to assist the investigating agency and the court for the purpose of advancing justice. Failure to prepare the medico-legal report, relating to the injured person admitted to the hospital for treatment, would sometimes pave way for great injustice.*"

In the same case, they passed directions on writing legibly. The Bench asserted: "*Therefore, we are constrained to direct the Directors of Health Services in the states of Punjab and Haryana, as well as the Union Territory of Chandigarh, to issue suitable directions to the doctors to prepare documents - medico-legal reports, bed head sheets and post-mortem reports - legibly and scrupulously, as those documents are exhibited to decide the fate of a case before the court of law.*".

Euthanasia

The Supreme court on March 7, 2011, delivered a verdict on Aruna Ramchandra Shanbaug case. This verdict will have a long term consequence for practice of medicine in the country. Pinki Virani a journalist appealed to the Supreme Court to end the life of Aruna as she was in a persistent vegetative state after a sexual assault. The court dismissed the plea.

In the judgment the court did not allow active euthanasia. It provided guidelines on withdrawing of life support in futile condition and termed it as passive euthanasia. It identifies the people who can take a

decision on futility of treatment and states that person should have the best interest of the patient. Once a decision has been taken to discontinue life support, it has to be approved by the High Court of the state. Once an application is filed, the Chief Justice has to constitute a two member judge Bench. A medical team consisting of Neurologist, Physician and a Psychiatrist will examine the patient. They will also elicit the opinions of the medical staff that are treating the patient. Based on the report of the Medical Committee, the court has to decide about permitting the withdrawal of treatment.

It has urged the parliament to pass legislation. Hence this verdict will influence the practice of critical care medicine.

Public policy

Is a set of normative enforceable guidelines accepted by official public body such as Government or legislature to govern a particular area of conduct? All laws constitute public policy. Public policy may not be specific and codified. Public policy incorporates moral consideration. Public policy is formulated by profound social decision uncertain and differing interpretation of history.

Some General Comments

Knowledge of laws

Lack of knowledge about the law cannot be used as an excuse for escaping the provisions of the law. Every Doctor must make an effort to be abreast with the laws and his rights to be on the right side of law.

Doctor – Patient relationship

Doctor – patient relationship is crucial to reduce medical litigations. Although only a small percentage of cases involving medical negligence succeed, they harass the medical practitioners. Most of these cases arise as there is a breakdown in communication between the doctor and the patient. Correct and clear information in a way that

the patient understands must be provided. The Doctor must know his limitations and should not give undue hopes.

Medical records

Medical records are another area that can protect the doctor against medico legal problems. The time the patient was examined, the findings and the provisional diagnosis has to be mentioned. Comments on all the lab reports need to be entered. A summary of the discussion between the doctor and the client has to be recorded. If there is a conflict between the patient and doctor, it also needs to be recorded. The resolution of conflict must be recorded. If a patient needs the case notes it has to be provided for him within 72 hrs. If there are no medico legal issues then the case records can be destroyed after 3 years after the last entry on the case record. In cases that have medico legal issues the case recodes have to be maintained till the case is finally settled.

Boundary Violations

Another area that is being addressed by the codes and the Courts is the concept of boundary violations. Professional boundaries generally refer to the conditions that describe the limits of a fiduciary relationship. That is, a relationship in which one person (a patient) entrusts his or her welfare to another (a physician), who receives a fee for the delivery of a service. These areas of potential problems include business transactions, gifts and services, mishandling of fees, and misuse of the physical examination. Sexual contact is the most extreme form. Sexual relationships between physicians and current patients are always considered boundary violations. Recent amendments to the MCI code explicitly prevents acceptance of gifts. MCI code also prevents sexual relationships with patients.

Conclusion

Medical practice has changed over the years. It has become more and

more commercial. The doctor- patient relationship has become more of a contractual obligation. In this scenario medical practice is being controlled by legislation. As Medical practitioners we need to know laws that affect us, so that we can protect patient's interest as well as the interest of the profession

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34

Stress Amongst Doctors and it's Management

Dr. M.R.Nalini

From time immemorial doctors and caregivers have been moulded in an image where they have to be more than human beings!

> *"Be Strong!*
> *We are not here to play, to dream, to drift;*
> *We have hard work to do and loads to lift;*
> *Shun not the struggle –face it; It's God's gift"*
>
> M.Davenport Babcock 1858-1901

Tinsley. R .Harrison the founding editor of "Principles of Internal Medicine" penned the following words in the first edition of the book in 1950:[1]

"No greater opportunity or obligation can fall the lot of a human being than to be a physician. In the care of the suffering he needs technical skill, scientific knowledge and human understanding. He who uses these with courage, humility and wisdom will provide a unique service for his fellow men and will build an enduring character within himself. The physician should ask no more than this, and he should be content with no less."

With this kind of indoctrination at the cost of self, there is a huge responsibility on the shoulders of doctors. Hence in carrying out the various requirements thrust on them, they could reach a breaking point.

Health, as we all know is not only physical health but mental and spiritual health. Only if the caregiver himself is healthy can he take care of others.

"Physician heal thyself", is a common adage. Does the doctor himself need healing? Is he above human fallacies? Can he help himself?

The purpose of this article is to try and sort the areas of conflict and stress that a doctor could face and how to heal himself or herself get over it. A tense, tired or anxious doctor cannot provide quality care.

Stress is commonly defined as any response, either physiological or psychological, to a stressor. A stressor is any event that requires an action from an individual.

Stress is not always a detrimental phenomenon. In fact some stress is essential in getting people to perform. The relationship between performance and stress can be compared to tuning a violin. If there is not enough tension on the strings, there will be no music; but if there is too much tension the strings will break. Consequences of over stress can be grouped as:

Subjective Consequences: Involves psychological effects of being over stressed, like high irritability, frustration, anger, aggression and nervousness. This can also lead to apathy, depression and loss of self esteem.

Physiological Consequences: here one may experience high blood pressure, difficulty in breathing, hormonal changes and other changes leading to more serious physical illness.

Behavioural Consequences: too much stress may lead to forgetfulness, not being able to make decisions, hypersensitivity, anxiety, frustration, jealousy and envy.

There is also a very close relationship between personality traits of a

person and succumbing to stress. Highly ambitious, worrying, fussy personalities succumb more to stress than a person who is placid and carefree.

Areas of Conflict and Stress

1. At the medical student level:

   The sheer volume of knowledge that the students have to acquire in a short time frame can be over-whelming. Added to this, competitiveness and the need to perform well, to go up the ladder, contributes to worsening the situation further.

2. After Graduation:

   Not being able to get into a program given the shortage of post graduate openings.

   Not having set goals and drifting.

3. At Professional Level:

   Not being happy with the job one is doing.

   Pressures occurring due to mistakes in medical decisions.

   Long working hours doing a highly stressful job.

   Jealousy of colleagues.

4. Knowledge Explosion:

   Not being able to cope with the plethora of information and keeping up with the new emerging knowledge.

5. Emotional Level:

   Working with terminally ill patients and in intensive care units can be emotionally stressful.

6. Family Life:

   Not being able to spend quality time with one's family and having

to put the profession first before the family. Special needs of lady doctors, if they have young ones can cause a conflict of career *versus* family.

7. Financial Inadequacy:

A doctor's earning capacity is attained later than that of most other professions and thus leading to a sense of inadequacy in the earlier part of one's career.

8. Personal Health:

Illness in the doctor himself/herself adds to stress.

Any of the above pressures could push the physician into depression and suicidal thoughts wherein he may take recourse towards alcohol or substance abuse to allay these feelings. This only worsens the situation.

Managing Stress

There are many ways for individuals to manage one's own stress. In whichever way the individual chooses to manage stress, five guidelines seem essential for success:

1. A person must make explicit decisions to manage stress.
2. Faddish methods should be avoided, for, they are often ineffective and may actually prove to be harmful in the long run.
3. Patience is essential, as lifestyle changes seldom take effect quickly.
4. Stress management should be regarded as a life long process and not something that is a one off effort.
5. A battle that cannot be won should not be fought.

Stress Management Techniques[2,3]

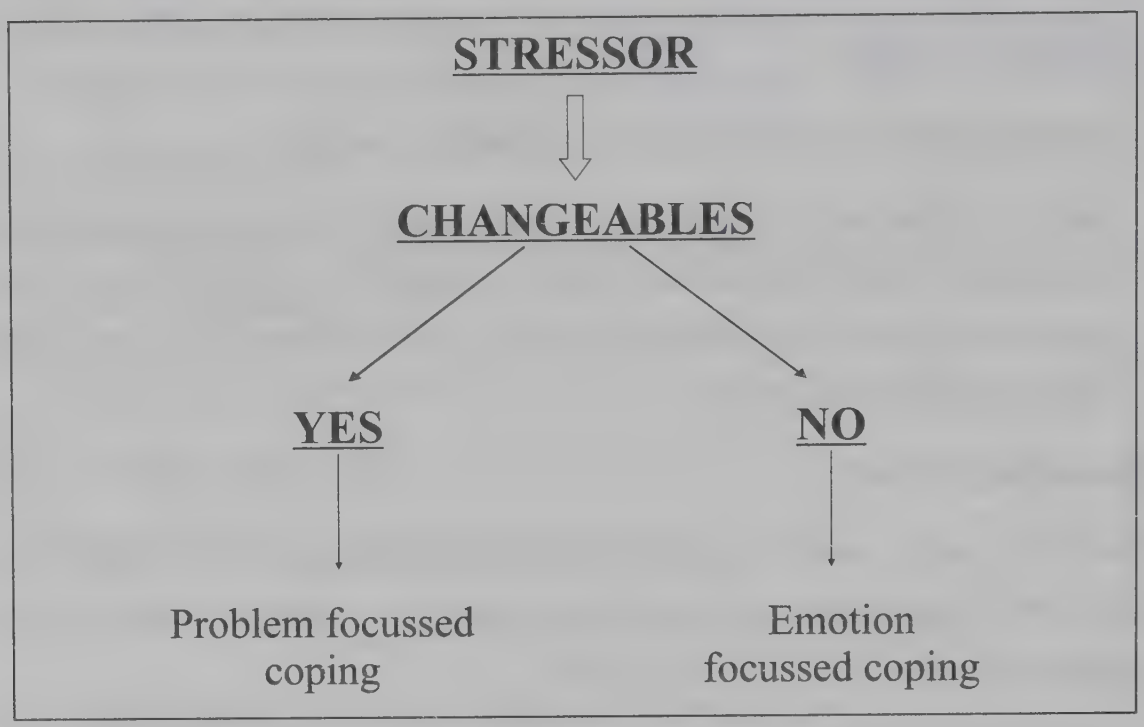
Most of us cope and handle many of life's demands each day. But if a

demand threatens to outstrip our ability to cope with it then we have got ourselves a stressor.

There are two ways to deal with a stressor:

A. Problem focused coping – where you attempt to combat a stressor.

B. Emotion focused coping – where you attempt to live with a stressor.



Problem Focussed Coping

1. Clearly define the problem.

2. Seek information regarding the problem.

3. Identify alternative courses of action to eliminate the problem and take action on the most promising alternative.

4. Monitor the results and revise the course of action as necessary.

Most people do not approach a problem systematically as above and they deal with it on an intuitive basis which in the, long run, could have distressing results.

Emotion Focussed Coping

This is most useful for demands that one cannot change. Difficulties that one has to live with may turn into bigger problems if one does not accept they cannot be resolved. Eg: Grief caused by loss of a loved one, growing old, terminal cancer and the suffering that accompanies it. These are inescapable human predicaments which one must learn to live with. We need the wisdom to know the difference between the things we can change and the things we cannot. Some strategies used to cope with this are:

1. Accept the inevitable.
2. Reframe situations in ways that will reduce the suffering.
3. Suppressing stressful thoughts that merely fuel stress.
4. Practicing Relaxation techniques.
5. Using exercise to lower uncomfortable physical phenomena like headaches, palpitations etc.

Personal Planning[4]

1. Life and career planning for the long term.

A majority of people take life as a stream and get caught up in the current of events, emotions, situational pressures, dilemmas and past experiences. Most do not plan life goals and pursue them.

Studies have shown that only 5% of graduating students write their goals; 3% hotly pursue them and these 3% achieve higher success than the remaining 97% put together. People rarely establish a vision for their life and pursue the same. As a result they reach no where or reach where they never thought they would.

Vision becomes a motivating force and inspires one till one achieves one's goal. Vision helps in overcoming shortcomings and propels one to work beyond present resources.

Root Cause Analysis (RCA): Helps in developing a personal quality checklist by working on non-conformance areas in life.

Prioritise needs in life and understand that what holds good for one individual may not be the same for the other and work towards one's own needs.

Sheer academic excellence does not ensure that one becomes a good doctor and there are many other factors that help in overall development of a good personality like communication skills and empathy. One should update oneself continuously to move forward and keep up with the latest techniques.

2. Effective Day to Day Time Management

Peter Russell (1992) called the ever increasing pace of modern life – "acceleration syndrome"

Everyday one makes decisions about how to spend time. It is not that one does not have time for exercise or for getting a physical examination or a lot of other important tasks. It is just that time is filled with endless lists of things to do, many of which are not vital to our interests – "tyranny of trivia"

One needs to clarify values and prioritize time commitments accordingly.

Delegate certain duties to others.

Consider group practice

Do not let peer pressure push you into accepting to do what you do not want to do.

Learn to say "NO".

Good Exercise Habits

1. Regular aerobic exercise: This is the closest thing to a panacea for life's ills.

Make time for whatever kind of aerobic exercise you enjoy; be it walking, swimming, playing games etc. Team sports also help.

Exercise counteracts stress hormones, lowers blood pressure, prevents heart disease, decreases osteoporosis, helps regulate weight and greatly energises the individual. But, this requires self-discipline and as a result most people do far little of it. Even a few minutes of exercise will significantly improve quality of life.

2. Yoga: The overall aim of yoga is the attainment of physical, mental and spiritual health.

Methods:

Practice of physical postures (Asanas)

Breathing exercise (Pranayama)

Meditation (Dhyana)

Good Nutritional Habits

Balanced diet

Regular meals

Maintenance of recommended weights

Moderate use of alcohol and caffeine – People who get into the habit of using alcohol as a relaxant, ultimately may become addicted to it and this may destroy one's career.

Avoid drugs. Access to drugs for doctors is easy and one can easily fall prey to the addictive habit of using drugs.

No smoking – practice what you preach!

Get Good Rest

Adequate rest is a close second to exercise as a means of preventing stress and sleep is the best way to get it.

Sleep deprivation pushes your body to the limit without providing for the recharging of your batteries.

Most people require seven to eight hours of uninterrupted sleep for the optimal functioning, but, studies suggest that the average doctor gets far less.

Practice Thought Control

1. Avoid negative thoughts.

2. Avoid fear.

3. Avoid feeling jealous.

4. Don't let anger conquer you

Letting Go Techniques

I. Practice relaxation daily

It is important to take time to relax. At least once a day take time to distress and deescalate through relaxation.

There are many ways of relaxing:

Music works like magic to calm the troubled mind

Hobbies such as gardening help

Reading

Prayer

Do not feel guilty about spending time on yourself

II. Take short breaks or holidays – generally after a prolonged period of stressful work to rejuvenate.

III. Successful coping of stress begins with prevention - time spent in preventing stressors is more cost effective than time spent in combating them.

Careful planning and decision making is the key to healthy living.

Personal Health

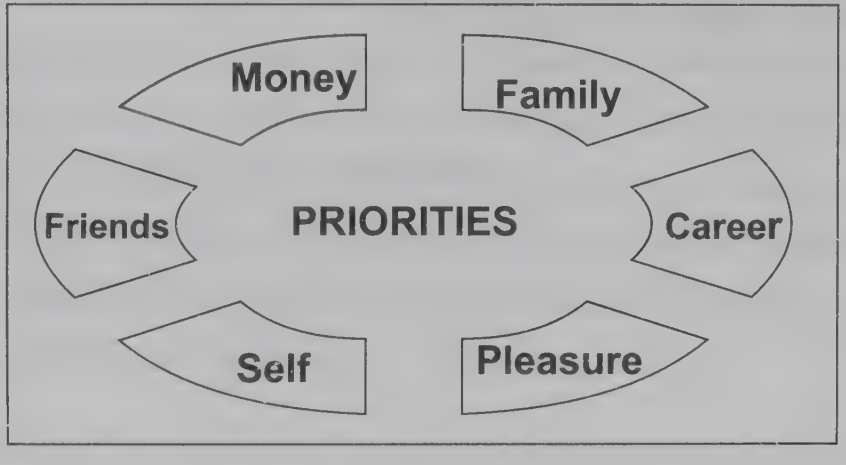
Doctors as a group tend to neglect their own health and could land in serious problems. They should also have regular health checks as they are as human as their patients. They should get out of the "nothing will happen to me" habit and proactively take care of their health to better cope with the stressful career they have chosen.

Conclusion

In conclusion stress management for doctors include both preventive and combative coping.

Prioritize your requirements and goals in life and work around it allotting appropriate periods of time to what is important to you (Fig 1).

Fig 1: Time management; the size of each segment varies with the priority one assigns to each of these aspects of life.[3]



It is good to develop other skills to help sustain financial liability if due to any unfortunate circumstances; a doctor cannot practice his profession. It is also wise to undertake investment planning early in life to cope with such circumstances.

The following verse by Frank L Stanton (1857 – 1927) says it all:[5]

"When it looks like all is up keep a goin'!
Drain the sweetness from the cup keep a goin'!
See the wild birds on the wing
Hear the bells that sweetly ring
When you feel like sighing Sing – keep a goin'!

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35

Humour in Medicine

Dr. Om Prakash

> *'A merry heart doeth good like medicine, but a downcast spirit drieth up the bones"*
>
> Proverbs 17.22

> *"In appearance, let the physician be of serious but not a harsh countenance; for harshness is taken to mean arrogance and unkindness. A man of uncontrolled laughter and excessive gaiety is considered vulgar, and vulgarity must be avoided"*
>
> Hippocrates

The very topic raises many thoughts in one's mind. Numerous anecdotes, jokes and gags many belittling the medical profession, flash across. Indeed, a good sense of humour and the ability to laugh at oneself are known to be possessing considerable healing power. As is well known, doctors have to deal with people in all kinds of distress and illnesses. The emotional impact is enormous. If you doubt it, ask any psychiatrist and he or she will tell you! I have always felt that we doctors need the canoe called laughter to safely cross the sea of misery and suffering we sojourn in during our lives.

Right from the times of Shakespeare, the jocular side of the healing profession has received attention. In Shakespeare's time, England was over-run with quacks. Here are a few examples of the bard's shots at doctors.

Pericles :

" Thou speakest like a physician, Helinacus;
That minister'st a potion unto me,
That thou would'st tremble to receive thyself !"
The Merry wives of Windsor :
"Nay, said I, will you cast away your child On a fool and a physician?"

But coming to the present, in this essay, I shall explore the world of humour, as we understand. If you are looking for a few medical jokes, I am afraid there are none. Rather I will try and understand why it said that "Laughter in no joking matter!"

Laughter is so universal that we all laugh many times a day. There is no barrier across cultures; countries, race, creed or anything else as far as the ability to joke and laugh is concerned. We laugh for many reasons. The power of laughter as a social tool is well known. We smile at strangers before any interaction takes place. We laugh at the cartoons in the news media which depict the paradoxes we have to live with because of our politics and its actors! We laugh with young children and on social occasions. Yet, we rarely give conscious thought to the phenomenon of laughter. Laughter gives us an indication of the complex systems in our minds which respond to pleasure and joy. It is possible that nature has promoted laughter (by way of genes?) to aid social interaction. The phenomena of a joke, its appreciation and the resultant laughter have been extensively worked upon in recent years. Technologies such as the positron emission tomography have made us understand the sites in the brain involved in humour and laughter. The frontal lobe of the brain is involved in recognizing things as funny .The left side of the frontal lobe helps analyse words and structure of jokes; the right side performs the intellectual analyses needed to appreciate the joke. In the next and final stage, the electrical activity spreads to the motor cortex and the physical components of laughter result. The physical expression involves facial muscle contractions, increased breath rate, spasmodic

contractions of the diaphragm, excessive tearing etc. Often, there is an other bout of milder laughter, indicating that the joke is being reprocessed, as it were. The rapidity with which the laughter response occurs shows that the signal transmission is almost instantaneous.

Consider this. Two men who have never seen bananas are traveling in a country where the fruit is common. They buy one banana each and enter a train. After a few minutes, one of them takes a bite. "Jack," he says with terror in his voice, " Have you tasted the fruit yet?" "No" replies his friend. "Do not eat it," says Joe; "You will go blind!" The train had, of course, entered a long tunnel!

You will see all the elements of a joke here. The narration builds up a sequence. The plane of thinking is focused on the "exotic" fruit and the reason for the man "going blind" rings in the punch line. The longer the joke – within reasonable limits, of course, -- the more effective is the joke. But the art of telling a joke lies in the narrator's ability to bring the listeners to a height of suspense and dissolve it in the laughter, which follows the final bow of the punch line!

The sense of humour and ability to laugh easily are pristine qualities. A person endowed with a healthy sense of humour is more likely to shrug at the errors of others than he is to condemn them. He knows that to err is human. You cannot be angry when you are laughing, can you? The bard has said, "Laugh, and the world laughs with you, cry and you cry alone!"

The real impact of this truth is most poignant if one has gone through depression in some stage of life.

Now let us consider some aspects of humour as it relates to the medical profession. Many people wonder if mirth and humour have any place at all in medicine; after all, the healing profession deals with various forms of illnesses, some curable, others not. Anxiety and depression are always rearing their heads in a doctor's life.

Amidst all this, what is the place of hunour? "Laughter is the sunbeam of the soul " said a philosopher. How true! humour therapy has become increasingly used and experimented upon in recent years. Laughter lowers blood pressure; it also enhances immune function by increasing imterferon gamma. Endorphins, the body's natural painkillers are increased during laughter. Many hospitals all over the world are using laughter programs in their wards with good results. In India too, laughter clubs are very popular; laughter is, after all, contagious and an emotion that spreads rapidly. Studies have shown that a good sense of humour inculcated in people with depression helps alleviate the mood disorder.

There is considerable literature on the role of humour in reducing stress. These have shown that the degree of perception of stress (the discrepancy between "what is "and "what ought to be") is balanced by the power of healing by jokes; a better sense of perception of the self is possible when one is in a joyous mood rather than in a despondent one. While no one argues that medications are not needed, the behavioural approach to condition our responses to stressful situations are certainly rendered easy to a good sense of humour. In fact, it is easy to assess the degree of depression by making a joke and looking for the prompt response and its magnitude; no response at all is bad news.

Benefits of Humour

Some reported benefits of humour in medical conditions are:

Fewer complications after heart attacks

Improved immunocompetence

Alleviation of intensity of pain

Enhanced creativity

Improved sense of self control

In our clinical setting, some effects of a jocular atmosphere are:

Facilitation of better social interaction

Improves confidence

Enhanced rate of healing

Diminished pain sensation

Reduction of "burnout"

Reduction of consequences of stress

Ways of using humour

What are the ways of using humour in medicine? Many innovative means have been used in this context. But essentially, the core of the personality of the doctor is what matters. The clown model (remember Patch Adams?) is very useful in pediatric wards.

One must constantly remember that humour requires sensitivity; else, one may cause pain and discomfort. Hence we should totally avoid ethnic and sexist jokes as they are far more likely to hurt. A misplaced phrase or even a word can markedly impair relationship between the doctor and patient.

In conclusion, we can now confidently say that the sense of humour and jokes have a very true role in the healing profession. These go a long way in helping patients to gain self confidence and develop an optimistic approach in their hour of need. I hope future medical curricula incorporate humour as a part of the studies that future doctors undertake.

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36

Bridging Ayurvedic Shastra and Biomedical Science

Darshan Shankar

India's Medical Heritage is very rich. It consists of two distinct symbiotic and mutually sustaining streams - the folk stream and the codified stream. The folk stream represents the empirical healthcare knowledge of thousands of village communities about eco-system specific resources. The codified knowledge represents sophisticated pharmacological, clinical and pharmaceutical knowledge that has partially drawn upon folk knowledge but also developed independently through the genius and research of rishi's and muni's. It is reflected in sophisticated systems of healthcare like Ayurveda, Yoga, Unani, Siddha and Swarigpa (*Gso-wa-rigpa).*

From an epistemological perspective, it is an extremely complex task to integrate different medical knowledge systems. This is because they are based on different worldviews, philosophical frameworks, logic and different theories of physiology, pharmacology and pharmaceutics and have different conceptions of the body and mind. This complexity is partly the reason why despite India's cultural advantage of being a parent to Ayurveda, Siddha and Yoga and a good student of western medical knowledge systems, there is not a single institution in the country wholly dedicated to basic research and good clinical practice in integrative medicine. Another reason and probably the more important proximate reason is that medical professionals and policy makers in India still carry the residues of the colonial modernization vision, which for political and economic reasons suppressed indigenous knowledge. They feel more

comfortable in the mono-cultural, globally dominant, western cultural and intellectual domain. This outlook is however today evidently undergoing a change in the wake of growing global experiences about the limitations of being wedded to mono-cultural solutions in healthcare.

However health seeking behaviour trends over the last decade suggest that medical pluralism also referred to in recent literature, as Complementary and Alternative Medicine (CAM), will govern healthcare delivery systems in modern societies. According to the recently published WHO Global Atlas of Traditional, Complementary and Alternative Medicine, as many as 42% of the population in USA, 48% in Australia, 70% in Canada and 77% in Germany used CAM at least once in 1990s. Europe and the Scandinavian countries, foreseeing the future have already taken the lead by establishing National Institutes for Complementary Medicine. The US has been a pioneer and almost two decades ago, both under its National Institute of Health (NIH) as well as in several of its leading medical schools; it has established centers for complementary and alternative medicine. Similar institutional initiatives are evident in Australia and Japan. This shift from singularity to plurality is taking place in urban settlements worldwide, because it is becoming increasingly evident that no single system of healthcare has the capacity to solve all of society's health needs. In rural areas in Asia, Africa and Latin America, traditional medicine, (the oral stream) contributes to 70–80% of the population's primary healthcare needs alongside western biomedicine, which plays a smaller role.

India has a comparative advantage and can be a world leader in the area of "complementary medicine" and medical pluralism. It is because of its strong foundations in western medical sciences and an immensely rich and matured indigenous medical heritage of its own. It is the only country which has provided a legal status to five non-

mainstream systems of medicine namely Ayurveda, Unani, Siddha, Swarigpa (*Gso-wa-rigpa*) and Homeopathy, alongside its mainstreaming of western biomedicine (Allopathy). But all these six systems plus the folk stream function today in India as parallel streams with very little interaction between each other.

One reason for limited interaction between different systems of healthcare is the confusion regarding the relevance of traditional knowledge. There are still scientists in India and other countries who believe that traditional knowledge is obsolete and irrelevant for contemporary needs. This clouded view probably has its origin in colonial and post - colonial history when deliberate attempts were made to distort the value of non-European indigenous knowledge systems as part of a political strategy of domination.

In early 20th century sociological literature, "Traditional Knowledge" has been depicted as backwards, unchanging. Modernity on the other hand is characterized by attributes like growth, dynamism and change. This characterization is also reflected in social science school text-books in Indian schools. It tends to create a divide between tradition and modernity, the former being regarded as generally retrogressive and the latter as progressive.

Just as the present flows from the past, so also there is a natural and an inherent connection, between tradition and modernity. In essence, the modern may be described as "evolving tradition".

How did this misunderstanding about the nature of traditional knowledge come about? During the last three centuries wherein Europe has been politically dominant on the world stage, a strange social phenomenon occurred in many parts of the world particularly in countries in Africa, Asia, Australia and North and South America. In these countries, which were colonized by the Europeans, they succeeded in creating a huge disruption in the social evolution of these societies by imposing a European tradition on the indigenous

cultures. Western politicians and scholars committed what contemporary history will judge to be a civilizational wrong and a gigantic cultural blunder by misleading the indigenous intelligentsia and masses of dozens of colonized countries into believing that modernity was no longer to be a natural evolution from their own past into their present, but it had to be imported from the advanced west. Thus, a cultural divide was created between an evolving indigenous tradition that was seeking to come to terms with the present, and an alien super-imposition from the west decrying the indigenous effort as orthodoxy and imposing for hegemonic purposes, its own modern cultural constructs, as the universal strategy for modernization of all societies. It would however be wrong to place the entire blame for disruption in the endogenous development process, solely on the door of colonialism. A part of the blame must perhaps be shared by the native leadership and attributed to some inherent temporal weakness in the indigenous cultures that allowed them to weaken.

Scientists concerned with modernization need to understand that while all societies can share and learn from each other, the core of their modernity must derive from their own roots. In fact, no single social culture has balanced solutions to all the contemporary social and environmental problems and therefore modernization should not be accepted as a mono-cultural process. Modernisation is in essence just like biological diversity, an inherently diverse, society, ecosystem and culture specific process.

The challenge today for bridging shastra and science is to design a trans-disciplinary or inter-cultural research framework. This is certainly possible and desirable. It is possible because both the traditional Indian Health Sciences and the Western Biomedical Sciences represent theory and practice for managing human health. It is only the approaches that differ. In western sciences, one investigates nature in the observer- observed framework. In this framework when the scientist takes the position of an observer with

nature being - the observed, the epistemological question that creeps in is, how does a part of nature (the scientist), observe the whole? Evidently a part of a whole can only observe another part and can never observe the whole. Western Sciences therefore inevitably achieve a reduced or partial view of nature. However, in the traditional health sciences like Ayurveda and Yoga, one studies nature not by standing apart from it (as an observer) but by becoming one with it and thus achieving a holistic perspective. Achieving oneness is a function of a rigorously trained mind as described in the Patanjali Yoga Sutras.

The design of the research framework for bridging western and Indian health sciences, therefore, has to essentially address the relationship between the holistic and reductionist perspectives of Ayurveda and Yoga on one hand and that of western biomedicine on the other. The whole and its part are obviously related but the key is to appreciate that they do not have a one to one relationship because the whole is not equal to the part and even the sum of the parts do not add up to the whole. Yet they are related and are obviously complementary, if one knows how to combine them. One should therefore not be seeking *equivalence* in developing the relationship between Ayurveda and Western Sciences. Otherwise, one will either reduce the whole to a part, or assume that the part represents the whole, and thus develop a distorted understanding. Exploring integration of holistic and reductionist perspective is one of the most serious epistemological challenges of the 21st century in the field of medicine.

Collaboration between Ayurveda and Biomedical sciences can be very fruitful. There are certain incredible details of parts that science uncovers that can enrich the understanding of the whole and similarly there are new perceptions, insights that are revealed in a holistic view that can fundamentally alter the partial view.

At a practical level, one can identify several areas for exploring integrative approaches pivoted around Ayurveda such as:

Integrative approaches for documenting clinical history,

Integrative physical and mental examination protocols,

Design of new investigations to generate trans-disciplinary evidence,

Interpretation of diagnostic reports,

Integrative treatment strategies,

New outcome parameters and their measurement,

Preventive health care strategies,

Research into metabolic and immunological implications of Ayurvedic detoxification procedures (*panchakarma*),

New designs for trans-disciplinary pharmacological studies,

Design of statistically tenable whole system clinical trials,

Development of innovative educational modules on Ayurveda and *Integrative Medicine*.

On a more practical plane and in an immediate time-frame, integrative medicare can be implemented by establishing multi-knowledge-based poly-clinics and hospitals, which can provide a multi-cuisine cafeteria approach to health services, located under one roof. This strategy for functional integration will require mutual respect and understanding and creating an environment for cross referrals amongst medical professionals trained in different systems. It will involve an appreciation of the strengths and limitations of different medical systems and based on this appreciation, a carefully worked out code of ethics for referrals. Such a plan of functional integrativeness can immediately provide better options and informed choices to millions of healthcare seekers and one need not wait for the

more complex research led, epistemological integration, to be completed.

In the light of health seeking behavior trends, the challenge and opportunity for integrative medical research and good integrative clinical practice stares one in the face. The outcome of such trans-disciplinary research can be anticipated to be very rewarding. It can result in the creation of new, multi-cultural, knowledge-products that can perhaps make original contributions to the world of medicine. Judicious and urgent action is called for. Not all health knowledge workers however have the sensitivity to see the writing on the wall.

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Homoeopathy - Reflections

Dr. R. Munir Ahmed

"So you are a homeopath?"

This was how my childhood friend exclaimed. I did not know whether it was an expression of condescending sympathy or an incredulous wonder.

I was meeting him at a social gathering of old school friends after a gap of ten years. Well, a quarter century back, it was indeed a matter of adventure for a fairly well scoring student, with no family background of involvement with homeopathy to seek out a career in homeopathic practice.

It was a quirk of fate that landed me in a homeopathic college after my 10 + 2 exam. The journey through the course was anything but uneventful; the concept of *'cognitive dissonance'* teasing me very often and forcing me to grope for reassurance that I will somehow see light at the end of tunnel. This intellectual exercise often tempered with an emotional and social intelligence led me through a journey of discovering homeopathy as a healing system that is singular in some ways and blended with the environment in some other ways.

History is replete with game changing activities by people who were dissatisfied with the establishment; homeopathy is one such example. Its founder, Samuel Hahnemann, feeling uncomfortable with the arrangement of medical practice in the late eighteenth century, set about establishing a system of healing that was radically different for those days.

Hahnemann had graduated in medicine from the University of Erlangen in Germany in the late eighteenth century. After a brief stint with clinical practice, he shifted to translating medical texts. On one such occasion, he serendipitously reached to the principles that established homeopathy as a clinical discipline.

Homeopathy is steeped into the philosophy of vitalism, which is a doctrine that the functions of a living organism are due to a vital principle as distinct from biochemical reactions. This is also the basis for holistic medicine. The reactions of a subject to disease state are considered to be unique to the person because of the vital force that resides in him / her. It assumes that the vital force has the intelligence to react to the changes in either internal or external environment. This ability for response determines whether a person gets sick or stays healthy. This philosophy also promotes the concept that the whole is greater than the sum of all parts.

Homeopathy is therefore a clinical system that treats subjects with medicinal substances which are selected basing on symptom similarity. These medicines are highly diluted, so as to prompt the body's natural faculties of healing to take over and restore health. Homeopathy is therefore based on the principle that you can treat 'like with like', that is, a substance which causes symptoms when taken in large doses, can be used in small amounts to treat similar symptoms. For example, peeling an onion can cause watering of nose and eyes; therefore, according to this principle, when onion *(Allium cepa)* is used as homeopathic remedy it can treat people with similar symptoms, e.g., rhinitis / conjunctivitis.

Prescribing in homeopathy involves a series of decision making – from the point of case taking till prescription is made and followed up to its logical end. The essential feature of homeopathic prescription is individualising the subject. This process takes into account the disease diagnosis and person individualisation.

It is believed in homeopathy that each individual has a unique

response potential to pathogens. Depending on the level of individual's immunity, he / she may or may not contract disease even when exposed to pathogens. Further, the expressions of different individuals for the same pathogen may not be uniform. For example, in a group of people exposed to the same strain of virus, all may develop feverish symptoms: of these one may have predominant thirst, while one may be thirstless; one may prefer warm water, while another might like cold water to drink. Thus there could be innumerable symptom permutations, which represent the singularity of human response. It is precisely for the above reason that the case profiling in homeopathy is an elaborate affair, often lasting for more than an hour.

The detailed data gathering enables the prescriber to differentiate subjects as unique entities. In this process, often the expressions of disease state get relegated to background, while the customised responses of the subject assume a greater significance for prescription. This is one of the reasons why homeopathy has the flexibility to treat conditions that may be beyond the realms of physical diagnostic procedures. The social and psychological factors are significant factors not only for managing the case, but often for even deciding the prescription.

Therefore, a thorough understanding the guiding principles of medical humanities like behavioural decision making, medical philosophy, medical sociology, health psychology, etc is critical to practice homeopathy. To practice homeopathy meaningfully, one has to transcend beyond the realms of mere clinical application, into the domains of medical humanities.

The operational principle of homeopathy is derived from the observations of Hippocrates that medicines will act either on contrary or similar principles. The principle Contraria Contraris Curentur suggests prescribing medicines to counter the symptom expression found in a subject. For example, giving a medicine that would induce

perspiration to bring down body temperature. The principle of Similia Similibus Curentur, on the other hand advocates generating a disease force, that is similar in its features and intensity to the one that already exists in the subject. This argument was not only propounded by Hippocrates, but was also vouched by medical philosophers of later day like Galen and Paracelsus.

Hahnemann plumped for the principle of 'similars' and named his discovery as homeopathy, which in Greek means 'similar suffering'. To differentiate his discovery from the prevalent clinical practice he coined the term 'allopathy', which means 'different suffering'.

Apart from the concept of 'like cures likes', homeopathy lays stress on the simplicity and minuteness of dose. There can be only one drug that would be indicated at any given point. There is no scope for mixing drugs or prescribing multiple drugs. The dose has to be in the minutest possible form that is required to evoke body's response that creates a disease force that is similar to, but slightly more intense than the existing disease force in the subject. These two disease forces run parallel to one another in the body; while the artificially generated disease, being similar in nature neutralizes the pre-existing disease, the artificially created disease runs its course and ceases to exist, as it has a limited time span.

The data of homeopathic medicines are generated by experimenting with the drug substance on healthy human volunteers by a process known as 'Homeopathic Pathogenetic Trials'. These trials are conducted with on one substance at a time. Therefore, when prescribing homeopathically as per the Law of Similars only one medicine can be given at a time. Homeopathic medicines are usually given in very small doses, which reduce the probability of adverse reactions due to medication.

It has to be admitted that there is no conclusive explanation as to how homeopathy works. Many justifications are put forth by the

champions of homeopathy. These clarifications are drawn variedly from the likes of nanotechnology to the concept that water retains memory of substances that come in contact with it. However, the last word is not yet said on this issue, as a see-saw battle of wits is continuously raging on between the protagonists and adversaries of homeopathy.

One of the factors that prevent conferring a veneer of scientific semblance to homeopathy is the unsuitability of designs and methods that are popularly used to evaluate clinical effectiveness of therapies. Homeopathy is a customized therapy and not a fit-all-robe. Prescriptions are context based, either for an individual or for a community, as in case of epidemics. Thus, to evaluate the effectiveness of a therapy one will have to differentiate medicines on individual basis. This precludes the application of a classic random controlled trial that prefers to evaluate the effectiveness of a single dependent variable in the form of a therapy.

Perhaps this could be the reason why there are so few examples of scientifically conducted studies in homeopathy. It is estimated that the total number of homeopathic RCTs that are published since RCTs were instituionalised in the year 1950 account for 142. This is a miniscule number when contrasted with the sheer numbers that the conventional medicine can showcase.

This only shows that there is a strong case for a proactive approach by homeopathic professionals to undertake more such studies, even if it means modifying certain norms to suit the singularity of the aptitude of homeopathy.

The "unconventional" nature of homeopathy has spawned many myths that have modulated people's responses towards it.

The most frequently brandished 'allegation' is that homeopathy is unscientific. Well, homeopathy is based on certain principles that provide a structure for its verification. It's very founding was

based on both empirical and experimental evidences. The reason that there are no serious efforts to verify and document the basis of homeopathic principles does not make it unscientific. The homeopathic profession has in fact made attempts to clarify the reservations that beset its understanding by the scientific community.

That homeopathy is individualistic and not compatible for community based context. This impression has become widespread because the mainstream homeopathic practice is clinic based. The subjects are profiled for determining their individual uniqueness to finalise the prescription. However, there are numerous instances where homeopathy has proved more beneficial in epidemic situations. It may be admitted here that homeopathy is more context specific; it could be in the context of an individual or a community.

The serial dilution method adapted for preparing homeopathic medicines attracts a lot of flak, claiming that there is no medicine substance remaining after such a process. There have been attempts at explaining how homeopathic medicines retain their medicinal properties defying the physical principles like Avogadro's number. Some Nobel laureates like Luc Montagnier and Brian Josephson and researchers from the Indian Institute of Technology – Bombay, have explained the physico chemical basis for the action of homeopathic medicines.

Another 'charge' against homeopathy is that it is purely placebo response. Homeopathy is not only used on human subjects, but also on animals and plants for various disease conditions. There is no way for bias to creep in the subjects to influence observations. Further, the sheer volume of statistical data generated for the past two hundred years – much of which is appreciative of homeopathic therapy – is too significant to be rubbished as nondescript.

One more accusation is that homeopathy is too slow to act. This is mainly due to the elaborate nature of profiling that is prerequisite for homeopathic prescription. Thus, it is more of human failing than the system being at fault.

One of the reservations about homeopathic medicines is that there are many inorganic chemicals – often called heavy metals – like arsenic, mercury, that may be toxic for any living being. It has to be remembered that the unique process of preparing medicines, called as 'drug dynamisation', which involves a series of diluting the medicine with alcohol / distilled water and agitating this blend in a particular fashion successively is known to dilute the toxic nature of the drug and enhance its medicinal quality. This may sound paradoxical, but this is how the homeopathic medicines are known to be tamed. A thorough pharmaceutical scrutiny can highlight the mystery behind this process.

This is an objective portrayal of homeopathic possibilities. These apart, when the debate gets debased as a charade, many indictments surface on either side of the argument. There is a tendency among some homeopathic practitioners to lay claim of 'cure' for every conceivable condition irrespective of the gravity of situation. It is these outliers whose misplaced enthusiasm that get needless attention for discrediting homeopathy.

A dispassionate understanding of homeopathy by both homeopaths and other healthcare professionals can help in developing a regime of co-existence and cross-referrals for leveraging the benefits in favour of humanity. The recent attempts by the government to develop an integrative approach on the platform of National Rural Health Mission are in right direction. The concept of co-locating medical personnel from both conventional medicine and alternate therapies will foster an atmosphere of understanding, tolerance, co-existence and concerted healthcare action.

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Relevance of Spirituality to the Practice of Medicine: The Changing Paradigm

Dr. M. Balasubrahmanyan

Practice of medicine from ancient times, till recently, had always been a personal relationship between the healer and the patient. During recent times the emphasis has shifted from a concept of family physician to the hospital, where the services offered have become completely depersonalized. The hospitals, private or state owned, small clinics or large corporate ones have become the order of the day and in all these the patients go through a variety of experiences, which are sometimes very human, but more often subhuman or even inhuman. The present hospital based health delivery system has resulted in the common man being dissatisfied with the exorbitant cost involved in getting treatment for even minor illnesses. The general feeling, however much we may disagree, is that we physicians are more interested in their diseases than on the patients as human beings. Our system has made people conscious of disease and not of health. High-tech medicine has also brought about an illusory belief that it is a panacea for all illness. All these call for a new approach to the practice of medicine and to the system of teaching in our medical schools.

There are three things which we cannot define clearly. One is 'life', second is 'health' and the third 'death'. What is health? The World Health Organization currently defines health as a state of complete physical, mental, social and spiritual well being and not merely absence of disease or infirmity. Science of health is different from the science of medicine. While the latter deals with illnesses and their

cure, the former deals with the total well being of man, at all the above mentioned levels, and his relationship with his environment.

There is no doubt that science and technology have helped in extending the life span of man, but the same cannot be said about making life more human. Modern day medical practice continues to have a mechanistic approach, considering the human body as a machine and treating its ills as nothing more that setting right a machine which has fallen into disrepair. This attitude is basically rooted in the theories or Rene Descartes of the 17th century, that matter and spirit are two separate entities and totally unrelated. This has to undergo a radical change if the system is to really serve the needs of the society. It has to incorporate into itself consideration of factors like influence of the natural and social environment of the human organism, and the role of spiritual attitudes in the maintenance of health. But in any attempt to link spirituality with medicine the first reaction of the profession is that these are philosophical issues, outside the domain of medicine. The common thinking is that medicine is an objective science and subjective aspects like moral judgments, philosophical and existential issues have no place in it. All great scientists, including Albert Einstein, believed that many of their discoveries came to them as insights from a source beyond their mind and intelligence. Medical professionals should realize that all their knowledge based on the discoveries of several individuals came from one source, the Reality, as a gift to mankind for its benefit. Only a wed-lock between science and spirituality can guide humanity to the fulfillment of its destiny. Hence, because both are parts of one Reality, it is wrong to place spirituality in one corner and science in another. Unless modern medical practice gives due importance to the spiritual aspect of human life, its utility as a tool in the maintenance of total health of the human organism is bound to suffer a setback.

Though it will be wrong to assume that medical professionals are not personally interested in spirituality or are not religiously minded

people, it is true that most of them prefer to keep their spiritual and religious beliefs separate from their profession. All that is required of us is to try and make whatever we believe in, into a practicing reality that can be beneficially used in our profession.

The Grandeur That *Is*

Spirituality can be defined as the science of the Spirit, which is the force that projects, activates and guides all matter and all beings in the universe. To have a proper understanding of the Spirit and its powers, it is necessary for us to have an insight into the origin of the universe and the so called creation. Everything is said to have started about fourteen billion years ago when the entire energy, now present in the universe, was in a highly compressed state, inside a compact mass. What was the nature of this mass, the scientists are not able to decipher. But our ancient scriptures refer to it as the Supreme Consciousness, Prajnanam or Brahman, holding within itself all that was to manifest. Till recently scientists believed that consciousness developed in matter as the latter evolved into complex structures. But now most of them agree with our scriptural view that Consciousness is a primary reality, the ground of all existence, all matter and all living beings. This compact mass is said to have exploded with great sound, releasing intense heat. The occurrence of this phenomenon called the 'Big Bang' is accepted by most of the scientists and is also been mentioned in our scriptures. Following that cataclysmic outburst, the released energy spread out filling the vacuum around and part of it condensed to form various kinds of matter. It is said that only a very small fraction of the Consciousness manifested as the universe, and only a part of the released energy condensed into matter. The manifested universe is a projection of the Consciousness within Itself, and hence all the forms of matter are surrounded by energy as well as unmanifested Consciousness, and the latter enters into every form. Hence Spirit cannot be isolated as an entity apart from creation and assigned a separate place of existence. Our body

being a part of this manifestation, a form of matter, is not separate from the Spirit, and is to be considered only as an instrument used by Consciousness for its functioning. This Consciousness which is lodged in every form as the Self or the Atman, is the power behind all the functioning of beings. Another corollary to this great process of manifestation is that the universe is a whole and appears as a closely woven net work, with complicated relationships between the various parts which go to form the intricate web. The Consciousness being the unifying factor behind this wholeness, development of a spiritual outlook in man enables him to feel connected to the universe as a whole. Recent findings in the field of deep ecology have clearly shown how all forms of matter, both living and nonliving are closely interconnected and interdependent. Research in quantum physics has clearly proved that everything in the universe is dependent on everything else in a fundamental way. Though the quantum physicist has been able to study in detail about the laws that govern the movements of the basic particles of energy and matter, he is not willing to accept the existence of an extraneous entity, as the source and operator of those laws. This is because the scientist is not, till today, able to subject Consciousness to instrumentation in the laboratory. He knows that an unbiassed study of the same is impossible since his own consciousness influences the outcome of such experiments, and the experimentor himself, unable to stand aloof, becomes part of the experiment. Hence it is said that science is like the letter 'C' while spirituality is like the letter 'O'. The gap in the former can be filled only by Consciousness, the study of which, at least for the present, seems impossible.

At this stage it is important to consider the question 'what is life?' a question yet to be answered by science. A careful study of what is said in our scriptures and by the mystics, life can be conceived as a form of energy or force which pervades the entire cosmos and is shared by all living things, plants, animals and humans.

Quantum Physics Shows the Way

For a better understanding of the subject under discussion, illness and healing it is necessary to become familiar with a few basic facts of quantum physics. Though the findings of quantum physicists have radically changed our view of the universe, they have not as yet been fully utilized by the medical scientists. One of the basic conclusions arrived at by quantum physics is that the manifested universe is all energy in its variety of types and forms. In other words, energy was not created or processed in the universe but the universe is itself energy. Basically it is dancing energy which assumes different forms and keeps changing from one to another.

Vedanta says that Consciousness is the source of origin and end of all the energy filling the universe. It is a never ending cycle of Consciousness giving rise to energy, which in turn condenses to matter, only to return back to energy and Consciousness. This raises an important possibility that new energy may be formed by the Consciousness residing inside our bodies, one that has a bearing on our forthcoming discussion on healing.

While a detailed discussion of these energy particles is not necessary here, reference to a couple of facts about them will be relevant. The various particles constituting all matter and energy have been collectively termed as 'fermions'. Their activities are said to be brought about by a system of messages that go around among them and these messages are carried by certain messenger particles called 'bosons'. Thus every particle in the universe is a fermions or a boson. We have seen earlier that everything in this universe is connected with everything else. This influence on each other is mediated through a communication system, information traveling between them at superluminal speeds. Whether such a system of transmission of messages is involved in intercellular communication inside the human body is an interesting point for discussion and investigation.

The Pulsating Field

In nonliving matter all energy is in perfect equilibrium since there is no activity. When life force is introduced into matter activity ensues leading on to dissipation of energy, resulting in entropy or disequilibrium, a state that has to be set right by ingestion or formation of new energy. All energy manifests as vibrating patterns and the human body being a gross aspect of energy, it can be considered as materialized vibration. Since the space around is filled with vibrating energy, it is obvious that the body must be continuously interacting with the energy around it, and influenced by it. While the scientists are familiar with a variety of electromagnetic radiations in the cosmos, it is suspected that there may be another different type of force around us, one that may be intelligent. If such a force exists, is it possible that the human mind, which is also a pattern of energy, can interact with it? Recently neuroanatomists and neuropsychologists have shown that all living matter is surrounded by electromagnetic fields and that the human mind can influence this force around the body.

Plant biologists have shown that rays of energy shoot out from plants into the space all around them. That such traditions surround the human body also like a sheath has been revealed by Kirlian photography. It has been referred to as 'bioplasmic energy' or 'bioenergy'. Many scientists believe that this 'life energy' circulates freely in the body and there is a constant interchange of this with similar energy in the environment. Smooth circulation of this energy through the body and the constant interchange mentioned above appears to be essential for the physical, mental, and spiritual well being of the human organism. The claim of our ancients and the mystics, that this shield of energy is a protective one warding off certain types of illness, is a matter for serious investigation by the medical scientist.

Every living structure we see, including our body, appears to be stable

but this stability is only a dynamic equilibrium of the energy. All living systems are capable of self organization and continually go through numerous fluctuations to enable them to be flexible and adapt to the environment. A living organism, at the energy level, passes on continuously from stability to instability, from order to disorder, from equilibrium to disequilibrium and back. This adaptation which is necessary to keep the organism alive and healthy, has resulted from a long evolution of intricate biochemical activities. But everything cannot be explained on a chemical basis and there has to be a powerful force behind this complicated functioning and its evolution.

The mental make up of man is such that, he suffers from pain and discomfort when he comes in conflict with others as well as with himself. People who are well- connected to the world around through family, friends, animals and plants and live an interconnected and integrated life, live longer and healthier. There is no doubt that the sense of insecurity, of loneliness and emptiness which many suffer from in the modern world, is the cause for many of the diseases afflicting humanity.

The Holistic Approach

Our approach to illness and healing has two aspects. One is the holistic approach, where the individual is to be treated as a whole, both physically and psychologically and not simply as a collection of various organs and tissues. The second is an ecological approach, where the social and environmental dimensions of his health are to be taken into account.

Our ancient Rishis held that the force circulating in the human body is the same as that pervading the cosmos and when it circulates in its natural state it carries out all the functions and maintains harmony both inside and outside. When it is in an excited state, there is derangement of the normal functioning of the body and gives rise to various diseases in the human body while in nature it causes

disturbances and catastrophes. This force inside the human body was referred to in our ancient medicine as 'prana', flowing through invisible channels called 'nadis' and concentrated along the spine in vortices called 'chakras'. In Chinese and allied traditions this force is called 'chi', circulating through channels or meridians, connected to many acupuncture points on the skin. Today, solid evidence has been found through valid instrumentation, to prove the existence of this force, and its interaction with external forces to produce positive and negative effects. Few among the common people and only a few of the medical professionals realize that disease comes through inaction or derangement of the life force within and through disturbance in its reaction with the forces outside. But most of the alternative systems of medicine are based on this principle.

Some scientists claim to have, by suitable instrumentation, measured the level of radiation around the body assigning an arbitrary unit called angstrom. A healthy human body is said to have a radiation level of 6500 units or a little more. The level is much lower in tobacco smokers and alcoholics. Microbes are said to exhibit much lower levels and it is postulated that they can gain entrance into the human body only when the level of radiation from the latter falls, to approach that of the microbes. Some claim that cancer patients give off a wavelength of 4875 angstroms, much earlier than clinical symptoms manifest and that it is possible to take remedial steps before the disease takes a serious turn. All these claims need further investigation and confirmation.

The Psychosomatic Link

The diseases which affect human beings can be grouped under three categories: physical, mental and spiritual. We are familiar with the diseases affecting the body. In the second category, besides the ones named by the psychiatrists, we should include qualities like anger, a variety of bad habits, lack of initiative and confidence etc., because

these are not normal human attributes. Spiritual diseases include limitless ego, intellectual pride, and dogmatism, enchantment and satisfaction with the material world, ignorance of the laws of life and about one's own divinity.

What is the role of the mind in the origin and progression of these diseases? To answer this question it s necessary to remind ourselves of some fundamental facts about the mind and its functions. The mind is best considered as a tool of the Consciousness, for its functioning in the world. However it is the first faculty, which of cognition, to appear when the life force enters matter. Hence it is present, though in a very primitive state, even in unicellular organisms, appearing long before the development of a nervous system. It is clear from this that the human mind, with all its complexities is not a product of the brain. It only uses the brain as its tool for its functioning. While the primary functions of the mind are cognitive, it involves itself in endless conceptualization, much of which is not only useless but can be positively harmful.

Few people realize that even microbial infection takes root as a result of lack of coordination within our system. Louis Pasteur, the first to describe microbes, suggested that the condition of the patient, his weakness and mental attitude have a large part to play in the establishment of infection. That a person's mind can influence others is well known. That it can affect inanimate objects also is clear from many observations of parapsychologists and from instances of extrasensory perception. That the emotional status of an individual can affect plants has been experimentally proved by plant biologists. Parapsychologists hold the view that emotional status of the mind causes changes in the electrical activity of the brain and can impose its rhythm on the brain of another. That the cognitive property is operative even at the cellular level is being increasingly accepted. It has been postulated that the human mind can influence the growth, multiplication and behaviour of cells in one's own body and probably

in others. Research has shown that the memories held by the mind can influence every cell in the body as exemplified by the observation that persons who receive organ transplants, often seem to reflect the mood of the donor. There have been reports that healthy cells are adversely affected when they are exposed to signals from dying cells. This also involves the question of biocommunication between cells. In vitro experiments carried out by some scientists have shown that leucocytes separated from the body, still react to the emotions of the donor. It is postulated that cells can 'converse' with each other by coding their messages in the form of special electromagnetic rays. The experiments on leucocytes, referred to above, have shown clearly that, a very sensitive and efficient communication system, separate from the autonomic nervous and neuro chemical pathways, exists in the body and that extensive electrical discharges at the cellular level, in the microvolt range, constitute the medium of such communication. Another interesting fact that arises out of all these observations is the apparent identity of this power of biocommunication with Consciousness, at the cellular level. Thus the mind, though not an integral part of the body or of the individual's awareness, is closely associated with both.

The medical profession is becoming increasingly aware of the fact that practically all disorders are psychosomatic in origin, with the body and mind interacting on each other. It is well known that pain is physical as it arises from the body, but suffering due to that is mental. It is also common knowledge that a man who imagines his body is of a weak constitution and lives with a fear of illness, keeps periodically falling sick, and continuing to suffer. On the other hand a man who believes in health and wholeness actually resists the onset of illness. It is also being increasingly realized by the profession that an integrated physical and psychological approach to treatment of illness is more effective than medication alone.

The Pathways

The fact that stress plays a significant part in the aetiology of many diseases, though known to the profession for sometime now, this knowledge is not being fully utilized in treatment schedules. As we know, stress is a normal reaction to adverse situations and is the basis for the 'fight or flight' response, in which the immune and endocrine systems play crucial roles. But stress is a double edged weapon. If the stress factors continue for a long time, the immune system fails. Both the systems are affected by psychological stress, the process being mediated through their physical and chemical links with the nervous system. Besides hormonal imbalance there is a breakdown of communication between the immune, endocrine and nervous systems, which in turn affects the immune cell response. Cancer research using experimental animals has shown that these changes in the immune system correlate with susceptibility to tumour growth. At the human level there is evidence to show that the way people deal with stress affects their susceptibility to cancer and its progress.

We are all aware of the details of the structure and distribution of both the central and autonomic nervous systems. Consideration of a few points regarding their functioning is relevant here. It is well known that the left cerebral cortex functions analytically and logically, while the right functions intuitively. Whether the activity of the left side can be suppressed voluntarily and the right side brought into action is not clear, but there is no doubt that acquiring such ability will have a great spiritual significance. Whether spiritual practices, like meditation, can achieve this, needs further clarification. Regarding the autonomic nervous system, there is some evidence to show that it can be brought under voluntary control through biofeedback training and by spiritual practices like pranayama and meditation.

The two mutually exclusive components of the autonomic nervous system involving different nerve circuits and neurotransmitters, communicate directly with the immune system. All the lymphoid organs are innervated and there is a close spatial relationship between

the nerve fibres and lymphocytes, mast cells and macrophages. Besides this the T-cells, B-cells and monocytes have been found to possess on their surfaces specific receptors for several neurotransmitters. The pineal gland is said to mediate between the immune system and the association cortex of the brain, through its connections to the hypothalamus, pituitary and the autonomic nervous system. Thus the nervous, immune and endocrine systems form a single cognitive network, which is operated through molecular messengers, the peptides. It is influenced by the mind and its emotional states, with the immune system suitably responding through its connections with the autonomic nervous system, the hypothalamus, the pineal gland, the pituitary adrenal axis and the thymus. The chemical transmitters, cytokines once considered to be specific to the immune system are now known to be produced also by the central nervous system. The neuropeptides once considered to be specific to the brain cells are now known to be produced by the immune system also. The release and action of many of these peptides are influenced by the emotional status of the patient. The sensory organs through their connections with the central nervous system are influenced by these peptides. Thus all our thoughts and sensory perceptions are influenced by our emotional states.The speed with which the response is brought about does suggest the possibility of the existence of a powerful coordinating force behind the phenomenon, and this force may be the Consciousness in us. We cannot doubt the existence or the power of such a force, since we are all aware of instances, when patients given up by us, to be in their last stages have made remarkable recovery.

Various recent studies in this field by physiologists, neurologists, endocrinologists and psychologists have led to the development of two new branches of science namely, Psychoneuroendocrinology and Psychoneuroimmunology. They are not therapeutic systems but they only document how stress, mental illness and negative mental states are related to the onset of other illnesses and to the process of

healing.

The immune system does not function merely as a defence mechanism, but also has a regulatory role in the entire cellular and molecular functioning of the organism. Small amounts of harmful agents entering the body are dealt with by the same routine regulatory phenomenon. Only when massive amounts of harmful agents gain entry the immune system is called upon to mount specific defence strategies.

Of all the lymphoid organs involved in the immune mechanism, the thymus has been found to play such an important role, that it has been referred to as 'the master gland of the immune system'. It is where as we know, lymphoid cells undergo maturation and selection before they are released into circulation. Till recently the thymus in the adult has received little attention. It has always been taught that the gland is active from late foetal life to early childhood and then atrophies. But recent research has shown that enough thymic activity is maintained even in the very old. A variety of hormones secreted by the thymus, having a wide range of functions, have been identified.

At this stage it is necessary to refer to certain spiritual connotations pertaining to the thymus. According to some the thymus is the centre supposed to control the quality of love. This has a bearing on our discussion since some evidence exists that lymphocytes and other cells can be influenced by love to track down and eliminate cancer cells. Another point that merits consideration is that some scientists have attempted to correlate the seven charkas of Indian tantric philosophy with the seven endocrine glands and nerve plexuses present at the corresponding locations. It is also interesting to note that the location of the fourth charka, known as 'anahata', located in the chest and associated with selfless love, corresponds to the location of the thymus gland. Another thought provoking fact is that spiritual masters, who advocate the practice of self attention and

abidance therein, advice us to concentrate on a point in the chest, referred to by them as the spiritual or the sacred heart, a point that corresponds to the location of this charka and of the thymus gland as well. Our ancients had identified the seven colours of the spectrum with the seven charkas allotting green to the anahata chakra, and interestingly green colour is traditionally associated with healing. It is claimed that those who keep tuned to this charka have an extra layer of protection and an additional source of new and ordered energy. It is said to be beneficial to tune to this centre when one feels under psychic attack.

Healing

It has been known from ancient times that all healing that occurs is self-healing, by an innate mechanism that exists in the body mind complex, one that can be stimulated to restore the body to health. The psychosomatic origin of many of the illnesses implies the possibility of psychosomatic healing. In this context the human system can be considered as the most ancient healer with a large variety of healing mechanisms, in its armoury. It is not difficult to understand that this natural healing power cannot be initiated and brought into action by the material body alone and that there has to be an ultimate powerful force behind it. That force, as already indicated, is Consciousness or Spirit, the only all efficient doctor, and submitting the body to its unimpeded action is the only true panacea. However it must be remembered that there can be many obstacles to the free action of the inner force. These include administration of wrong drugs and mistakes committed by the physician. Even a negative attitude of the physician towards the patient can present an obstacle. A subconscious resistance on the part of the patient in the form of an atom of doubt about the healing ability of the inner force may also stand in the way. Disbelief immobilizes the life energy. Can drug therapy be abandoned completely and healing left to this force? Yes, but it will take a long time before we can do that because of our long dependence

on medicines for centuries. Yet nothing prevents the patient and his physician, from making better use of this inner force more and more and avoid excessive and irrational drugging.

The Physician's Role

In this context what should be the role of the physician? The first step in this direction is for the physician to give up his prejudices and misconceptions, if any, about the Spirit and help his client to get into a state where his natural healing forces can become active. This has to be initiated by first making the patient aware of the existence of such a force within himself. Then he should be made to realize that he himself had participated consciously or unconsciously in the onset of the illness and hence he is equally capable of influencing the healing process. He should be repeatedly reminded to submit his body unreservedly to the action of the healing force in him. How this can be achieved with illiterate or semi-literate patients, will depend on the communicating skills of the physician.The physician on his part has to learn to use his own Consciousness to positively influence that of the patient to enhance the healing action of the force. This is based on the finding of the quantum physicist that in any type of interaction with others or even in any experiment the influence of the Consciousness of the experimenter cannot be excluded. Proof also exists to show that a healer can alter the bioenergy of his patient during treatment and that the brain waves of the healer frequently synchronize with that of the patient during healing.

There is an urgent need for a change of attitude on the part of the practitioner of modern medicine, to play a more efficient role as the custodian of the health of the society. First, he has to develop a holistic approach in his profession. That which temporarily alleviates suffering is not necessarily good. It should be recognized that though diagnosis of the disease is important, it is even more important to pay attention to the patient's status at mental, emotional and spiritual

levels. Most of the patients in this country almost totally give up themselves to the care of the physician and take his word as gospel truth. Hence we have a great responsibility and chance to treat them not only symptomatically but also to help them to regain mental and spiritual health. Secondly, we have to get over the belief that dependence on drugs and other outside forces as the only means of alleviating suffering and discomfort. It will not be an exaggeration to say that at present we have become slaves to complicated laboratory procedures and to instruments of precision. Time has come to safeguard against the increasing tendency to leave everything to computers and automation and increasing sophistication. Instead there is a need to pay more attention to human qualities like wisdom, compassion, respect, understanding and love, qualities beyond the dehumanizing influence of instruments and computers.

The physician himself should develop a spiritual insight. He needs the help of his own Consciousness to maintain a sustained attitude of love and compassion for the patient. He should learn to recognize the spiritual significance of the disease he is treating and constantly keep in mind that he is only an instrument of Consciousness, which is the true healer.

Spiritual Approach To Therapy

Before adopting the psychospiritual techniques in his therapeutic schedule, the physician has to get his patient acquainted with the psychosomatic origin of the disease, principles of self-healing and the role of his life force in the process of healing. How much to tell the patient, what is his ability to understand, what type of illness, acute or chronic is being treated, where the treatment is being given, an outpatient clinic or an inpatient facility, all these can be decided only by the concerned physician. In this attempt there is bound to be a conflict between the ideal and the practical.

The various strategies in use in this spiritual approach to therapy,

include psychotherapy, affirmations, guided imagery, recitations, prayer, use of light and sound, relaxation and biofeedback, meditation and yoga power, love and getting over body consciousness.

Psychotherapy and psychological counseling

Psychotherapy and psychological counseling individually or in groups have become an important component of all healing strategies. Though these two have become specialities on their own merit and perfected their techniques, a spiritual approach is yet to be, universally adopted. A question arises here, whether psychotherapy should be left to the specialist or the attending physician can undertake the responsibility. There is a need to resort to either or both, depending on the need of the patient and the type of illness being treated. For every case the physician cannot summon the psychotherapist, since it is not only impractical but it can do harm. In our country even a casual reference of the patient to the psychiatrist can cause apprehensions in the mind of the patient that he is a 'mental case', and soon make him one! On the other hand the present tendency, to resort to psychotherapy only after the patient has been labeled as 'psychiatric' has also to be got over. It should be realized that every type of patient and illness needs a psychological approach. A point to be kept in mind here is that the therapist has to realize that both he himself and the patient have to be in a state of intense awareness. Then only will he succeed in changing the patient's belief system.

Affirmations

These are statements the patient can repeat silently over and over again, until it becomes apparently meaningless and continues only as a thought. At that time it is said that the left side of the brain stops analyzing it and the awareness of the affirmation passes on to the right side of the brain which is concerned only with emotion and not judgment. It accepts the thought without questioning and a whole

chain reaction is set apace leading on to the enhancement of the healing process. The affirmations can be statements like 'I am well', 'my body is getting cured of the illness', 'I shall be alright soon', 'I have the power to get over this illness" etc. Group affirmations can also be resorted to, provided the participants have even mental attitude, concentration and an even sense of faith and peace.

Guided imagery

In guided imagery patient is first made to understand the simple principles of immunity and is guided to imagine the cells of his immune system attacking the pathogens or cancer cells and watch them being subdued and destroyed. This visualization is a powerful technique that causes an influx of life energy to the affected part of the body. In the beginning the imagery is active but soon it becomes subconscious as a conceptive one. As in the case of affirmations, repeated visualization passes on to the right side of the brain, and the healing mechanism accelerated. Such positive thinking is known to encourage the production of endorphins, and hence minor illnesses can be cured without resorting to drugs.

Mantras

Allied to affirmation, is recitation of mantras, which once initiated the patient can continue without further guidance. For this the patient need not be religious minded and the mantra need not refer to any particular divine entity. Depending upon the patient the mantras that can be repeated

may be the secular 'Gayatri', the Hindu 'Om Namashivaya', or 'Om Namonarayanaya', or simply 'Om' or 'Soham', the Buddhist mantra 'Om mani padme hun', the Christian 'Alleluia', the Islamic 'Allah ho Akbar', or 'Insha Allah' etc can be taken for recitation. Recitation also works in the same way as affirmation does.

Religion and prayer strengthen people's ability to cope with life

threatening diseases. In this regard many questions may come up: Is there a God? Does man need God? Man does need God. If there was no God man will have to invent one, since when he is in trouble he wants someone to come to his help. This may be a matter of self-deception or self-hypnosis, which the patient is not aware of.

What a devotee does not usually know is that it is not the God outside that answers his prayers, but is the one that resides within him as his own Self. Strong faith is said to up-regulate the immune system, reduce the risk of cancer, protect the cardiovascular system and improve general health. It has also been shown to increase blood flow to certain areas of the brain.

The important point here is that the patient has to surrender to his 'God' consciously, totally and unconditionally and place himself at His disposal. This is not same as leaving everything to destiny and resigning himself to his fate. It is not uncommon in our country to find patients taking vows to shave their heads or offer something in some holy place to invoke the blessings of the deity of their choice, and to tie a coin rolled up in yellow cloth round their wrist as an initial token offering. Do idols in some temples have such benevolent powers as expected by the devotee? There seems to be distinct possibility of this being true. The physician may reject many of the patient's beliefs as superstition, but he should keep aside such feelings and try if necessary even to encourage such ideas from the point of view of enhancing the healing process. He can, if necessary, even himself suggest to the client to adopt some of these if he is sure of the patient's belief and faith in such procedures.

A few facts about intercessory prayer are worth consideration. It has been shown that prayers undertaken by individuals or groups on behalf of the patient, in his proximity or even at a place far off from the patient, and with or without his knowledge, are very effective. Studies conducted with such prayer for patients in intensive care units showed a significant reduction in the use of antibiotics, an

appreciable reduction in the occurrence of pulmonary oedema, lesser need for intubation, and lower death rate when compared to control groups. The physician can take advantage of these findings and enlist the cooperation of such prayer groups according to the needs of individual patients.

Sound, Light and Fragrance

Sound, light and fragrance have been claimed to have healing properties. Of these sound in the form of music has, from ancient times, been associated with positive health besides conferring spiritual benefits. Recently there has been a lot of interest shown in the therapeutic effects of sound and music besides their effect on moods. There is a growing belief that certain sound waves can affect pulse, respiration and blood pressure and improve mental clarity. Music can be used to reduce stress levels, pain and anxiety and help patients to recover quickly from a variety of illnesses like hypertension. Group singing enhances the power of sound. Studies have shown that words used in the singing may not be important, and it is the sound vibrations that matter. Here the importance given to the correct intonations in vedic recitals, irespective of whether one understands the meaning of the words or not, is relevant. South Indian classical instrumental music has been shown to be an effective adjunct to other therapeutic measures. It is postulated that exposing the subconscious mind to pure vibrations influences the neuroendocrine and the immune systems, and trigger secretion of endorphins. Acting through the hypothalamic pathway they have a direct effect on the thymus also and restore the flow of life energy. How these beneficial effects of sound and music can be put into practical use is a matter to be worked out by physicians and hospital authorities.

There is not much scientifically authenticated information available regarding the use of light and fragrances in healing strategies, though

some people claim that different colours are associated with changing moods and with healing. Their claim is based on the assumption that since light is intimately associated with plant growth, the trait might be carried over evolutionally from plant to animal life. May be that photons also can play a part in the healing process, at the quantum level.

Biofeedback and relaxation techniques

Biofeedback and relaxation techniques have a part to play in the treatment of many diseases and painful conditions. Biofeedback involves monitoring of and feedback to the patient of physiological parameters like heart beat or muscular activity, so as to enable him to subconsciously change or regulate these activities. Relaxation besides being an essential step in and an adjunct to meditation, helps to combat stress and give the body a chance to replenish energy. The procedure is equivalent to the pose called 'Shavasan' of hata yoga and can be easily taught to the patient.

Meditation

Meditation which has been practiced from ancient times is found to be a very good stress reliever. It is the most effective way of achieving relaxation response and of contacting the life force. Thus it can be of great help in warding off minor ailments and aiding the healing process in major illnesses. It not only helps one to become spiritually strong but also increases the power of intuition, a fact that can be used by the physician for his own benefit and that of his patients.Extensive work has been done in this country as well as in the west on the effect of meditation on human health. Evidence is available to show that the procedure can reduce migraine, combat insomnia, alleviate irritable bowel syndrome, soothe premenstrual tension, calm anxiety, bring down the level of stress hormones, improve circulation, regulate pulse and respiration rates, lower blood pressure, ease abdominal cramps, aid digestion, get over depression and improve memory. It

has also been shown to increase haemoglobin levels and prolong the remission periods in cancer and other chronic illnesses. Increased blood flow to different parts of the brain, increased thalamic activity and changes in EEG have also been described.

Though love is a natural quality exhibited by members of the medical profession through their attitude of caring, kindness and compassion, only a few may be aware of its effect on healing. That love can have beneficial effects on plants and animals has been proved by numerous studies. That it can be equally effective on human beings has also been shown. Expression of true love can favourably influence the awareness of the patient. His consciousness comes into play, strengthens the immune system and reactivates the life force to deal with the illness and its effects. What is true love? True love is said to be divine because it is unconditional and is based on the awareness of the oneness of all creation. It does not expect anything in return. Such love is an expression of the true nature of one's Atman or Self. Actually it is equated with Atman in action. If an individual is able to focus his attention on his own Self and constantly abide in it, true love flows automatically on all around him. Hence it is no exaggeration to say that the degree of true love expressed by a physician will be directly proportional to the degree of his own involvement in spiritual activities and the development of atmic consciousness in him.

Getting over body consciousness, on the part of the patient is an important measure which can aid the healing process. The time taken for the cure of any illness is directly proportional to the degree of body consciousness of the patient. A constant sustained effort to dissociate oneself mentally from the body consciousness will ultimately give the strength to bear even the worst suffering and bring into play the power of self-healing. The patient has to be made aware of the fact that he is not the body and his true nature is the real Self or the Spirit or Atman or God residing in the body. This awareness can be achieved

gradually by repeated affirmation by the patient. By guidance he can be taught to psychologically move away from the dependence on drugs and other external aids and to rely more and more on the divine power within.

Teminal Illness and Death

The attention paid by most of the physicians to the phenomenon of death and its spiritual implications is woefully deficient. Usually when the doctor finds that a patient has reached his last moments and that nothing further can be done for him, he quietly quits from the scene leaving it to the patient and his relatives to face the situation. This attitude only reflects the lack of spirituality, which has become characteristic of our technology dependant society. As members of the healing profession we have a responsibility to help the dying patient and his family, to face the final moments and accept the reality and its inevitability bravely.

In treating a fatal illness, how much should we tell our patients? The worst we can do is to fix a time for the final outcome and tell the patient about it. All terminally ill patients know, whether you tell them or not, that their end is near. But it is our duty to present the news in a more acceptable manner, even to the relatives, and not abruptly and crudely. The worst we can do is to tell the patient that the end is coming fast and there is nothing we can do about it and then walk away. Patients who know that their end is near often exhibit irrational behaviour like anger. The healer as well as the relatives should understand that it is one of the means by which the patient is seeking relief. It is at that time we should try and help him to detach himself from meaningful relationships and go peacefully.

Physician, Heal Thyself

To have an effective spiritual approach to the practice of medicine, the physician himself should develop a spiritual outlook in his own life. Most people hesitate or even decline to develop spiritual

awareness because they are under the wrong impression that day-to-day life is different from spiritual life. All life is spiritual since life is nothing other than the Spirit in action. Just as one would expect a religious leader to be in constant rapport with God, the physician is expected to be himself healthy, physically, mentally and spiritually. It would appear that in real life we physicians are victims of stress, much more than our patients.

Our scriptures have raised the status of the physician to that of God Himself. They say, 'Vaidyo Narayano Harihi', because he is the one who removes illness which is a hindrance to spiritual sadhana of people. It is expected of him to develop his own spirituality not only to enable him to correctly assess the spiritual significance of the disease and the healing process in the patient that he is handling, but also to develop his own intuitive power. Both intuition and subjective knowledge play an important part in diagnosis and treatment, a fact which is not often fully appreciated by the profession. The source of both these abilities is the Atman. Here an important point to be kept in mind is that any intuitive guidance that comes from inside, should not be ignored by the physician, as it will have a dampening effect on further promptings.

These two abilities can be achieved by the physician himself by practising regular meditation. Here our main purpose of taking to meditation is not realization, but to acquire some of the benefits of the procedure, and make use of them in the practice of our profession. Space does not permit further discussion on this technique but enough literature is available on the subject. Another important trait to be acquired by the physician is exhibition of true love, which as mentioned earlier, flows from the Atman and constant abidance in the Self, enables such love to automatically flow out on all around.

To conclude, there is a large volume of evidence available to prove the beneficial role of spirituality in the practice of medicine and in this

regard there is a revolution in the offing in medical science, may be to the disliking of the pharmaceutical profession. It is bound to be in place, as the new millennium pogresses. Meanwhile it is essential for us to take a new look at the contents of the curriculum in our medical schools, so that our next generation at least will shed prejudices and bring about the required change to the best advantage of the society. Many medical schools in the west have already introduced in their curriculum these spiritual aspects of medicine. It is high time that, in our country, which is considered to be the spiritual leader of the world, when changes in medical curriculum are being currently discussed, the spiritual aspects will be kept in mind and the needful done. The prejudices and inhibitions in the minds of the current generation of medical practitioners and teachers have to be overcome, and bold experiments undertaken. As Max Plank says, "A new scientific truth does not triumph by converting its opponents and making them see light, but rather because its opponents eventually die and the new generation grows up, that is familiar with it".

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Reflection:

A Critical Tool for Personal and Professional Growth

Prof. Krishna G Seshadri

Diary entry January 27th 1991 11:00 AM: *"It was 4 AM. My eyes were just about giving way. It was a long night in the casualty; the traumas and the drunks had come and gone. I was looking forward to go home; just a couple of hours more. He walked in. I was warned about him – habitual asthmatic; comes here for a fix everyday. He wanted his shot felt that his lungs were giving away. "its bad today doctor; never felt this way" he said. I was not impressed. He's not going to get his way with me. I told him a nebulizer would do; that's what's recommended. I didn't even put a stethoscope on him. I called the nurse and told her to fix the nebulizer. He pleaded that nebs don't work for him. But I was the doctor – what does he know? 20 minutes later the nurse came running. I banged on his chest, tried a tube down his throat...But he didn't hang around. I can't forget that look; Put me in my place didn't he?*

"By three methods we may learn wisdom: First, by reflection, which is noblest; second, by imitation, which is easiest; and third, by experience, which is the bitterest" - Confucius

Two dimensions of the cognitive process are acknowledged as key to the practice of medicine. The first is clinical reasoning, which has somewhat become synonymous with problem solving; the second is

scientific thinking where problems are solved using research based evidence. The key to expert medical thinking is often considered to be a combination of clinical reasoning and scientific thinking. The third dimension of the cognitive process is reflection.

Our senses are constantly flooded with data – this data may be concrete or abstract pieces of information, or experience that may be positive, negative or emotionally charged. Each piece of this data is hungrily and often indiscriminately taken in by our brains to create a perspective. This perspective (literally a view or vista; *per* - per- + *specere* - to look) is unique to each one us and provides rules for interpreting data and experiences which in turn determines our action, response and attitudes to future experiences. Our perspective in many ways shapes who we are and what we become. Perspective provides principles for interpreting new experiences.

Diary Entry January 27th 1991 8 PM: Why did he have to come on my watch?

Why did he have to come and die on me? I intended him no wrong. Why did I listen what the nurses told me about him? What will my seniors say? What about my colleagues? Will my family find out? I am never going to take care of asthmatics – maybe I am not cut out for emergency medicine. Anyway I must be careful..

Each new experience is assimilated and transformed by one's past experience during the process of interpretation. The more intense the emotional context of the experience, the more it molds our perspective. Experiences strengthen, extend and refine our perspective by reinforcing our expectations about how things are supposed to be. They thus transform perspective into habits (a habit is some thing that we repeatedly do).

Reflection is a process that mediates between habit and experience.

When an experience that does not fit into our scheme of things occurs, we trade off perception and cognition for relief from anxiety generated by the experience. Thus, when experience is too strange or threatening to the way we think or learn, we tend to block it out or resort to psychological defense mechanisms to provide a compatible interpretation.

Diary Entry January 28th 6AM: "He would have died anyway; if not today tomorrow; I only wish he had not died on me. I went by the book didn't I. Giving epi is way down the algorithm. Why should I give it just because he asked me? I just happened to be at the wrong place at the wrong time."

Much of what we learn involves making new interpretations that enable us to elaborate, further differentiate, and reinforce our long-established frames of reference; or create new meaning. More central to learning, is to determine through contemplation, whether our beliefs continue to hold true based on the present circumstance or experience. This crucial learning process is referred to as **reflection** and is defined "*as an intellectual and affective activity in which individuals engage to explore their experiences in order to lead to new understandings and appreciation*". Reflection is therefore a process by which we examine and question the assumptions through which we justify our convictions. No need is more human than understanding the meaning of experience. The process by which the meaning of experience is derived is called reflection.

Diary entry January 30th 1991: I may know the science. But is science enough? Should I have factored in his experience of disease? Maybe he really knows what is best for him. Was I quick in judging him? I did not even give him the benefit of a good exam. Did my prejudice work against him? Did it work against me?

To extend this, reflection defines the context through which learning occurs. Indeed reflection becomes a critical part of decision making – it is the pause (even if momentary) that forces you to question "What am I doing wrong here?" Reflection therefore is not inaction as is frequently criticized but integral to thoughtful (as opposed to instinctive) action. The more we reflect, the more well thought our actions become.

Diary Entry January 31st 1991 4 AM: I must not judge patients by what I have heard of them; After all am I not there to listen to them? If only I had approached him with an open mind would he alive? If only I had listened to him would he have been alive? If only I had examined him carefully..?

Reflection can be both scientific and personal. While scientific reflection is oriented towards optimizing our ability to make evidence based judgments, personal reflection is oriented to the process of making sense of experience. Personal reflection is thus a careful exploration and appraisal of experience clarifying and creating a meaning for the benefit of balanced functioning learning and development.

Schon describes two types of reflection: reflection-in-action and reflection-on-action. Reflection-in-action is thinking-while-doing. It's a process that allows us to reshape what we are working on while we are working on it. Reflection on action is the more deliberate contemplation that provides meaning to past experience. As a result of reflection on action we see more – we also see differently.

Diary Entry January 31st 11 PM: Maybe I should not run away from patients like him. After all its patients like him who need me more; who will listen and not judge them by who they are – and respect their values. Every patient deserves my time and care, especially the ones

who do not have anyone else.

Reflection is not easily learned and like any other cognitive process requires practice. While it is probably the most important adult learning tool – it has been the least formalized and to keep in tune with the theme of the book "not taught in medical school".

In truth reflection can be learnt (with effort) and as a corollary taught. At its simplest form this is done through forced pauses during an experience or after an experience. A formal frame work described by Bortons is provided in table 1. Many medical schools have introduced ways to foster reflection among students. Some of these efforts include portfolios, journal entries and experiential learning.

An approach that is useful in medical situations is summarized below:

1. Description of the experience

Phenomenon – describe the here and now experience

Casual – what essential factors contributed to this experience?

Context - what are the significant background factors to this experience?

Clarifying – what are the key processes for reflection in this experience?

2. Reflection

What was I trying to achieve?

Why did I intervene as I did?

What were the consequences of my actions for: Myself? The patient / family?

The people I work with?

How did I feel about this experience when it was happening?

How did the patient feel about it?

How do I know how the patient felt about it?

3. Influencing factors

What internal factors influenced my decision – making?

What external factors influenced my decision – making?

What sources of knowledge did / should have influenced my decision – making?

4. Evaluation: Could I have dealt with the situation better?

What other choices did I have?

What would be the consequences of these choices?

5. Learning

How do I now feel about this experience?

How have I made sense of this experience in light of past experiences and future practice?

How has this experience changed my ways of knowing

Empirics – scientific

Ethics – moral knowledge

Personal – self awareness

Aesthetics – the art of what we do, our own experiences

Reflection is a deliberate pause – before, in and on action This pause is a precondition to more refined action – action that defines the growth and nobility of our profession. A pause that allows us to learn,

Table 1. A contemporary approach to reflection
(modified from reference 2)

What?	So What?	Now what?
Description and self awareness	Analysis and Evaluation	Building and moving forward
Examples What happened? What did I do? What did other do? What was I trying to achieve? What was good or bad about the experiences	Examples So what is the importance of this? So what more do I need to know about this? So what have I learnt about this?	Examples Now what could I do? Now what do I need to do? Now what might I do? Now what might be the consequences of this action?

adapt and become better physicians and better human beings. Experience is a great teacher – but its lessons are learnt only by putting a mirror to ourselves before during and after each experience. This process is reflection and is only polished by repeated and deliberate practice. Reflection is critical for the growth of the individual and society. In fact it is the process by which humanity evolves.

Diary entry – May 5th 2011 11 PM: Came home with the outstanding physician of the year award. The citation read "in recognition of outstanding and empathetic care to the community of patients". Mom must be proud. Hard to believe how one event shaped my life. Sad that I had to lose that one patient to learn to help so many; if he is still watching I hope he forgives me; this award – I dedicate to the one I lost...

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The Phenomenon Called Death

Dr. K Lakshman

Death is a universal event that every living being undergoes. The Longmans Dictionary defines it as "the last end of life". A medical dictionary defines it as "the cessation of life, characterised in humans by loss of heart beat, absence of spontaneous breathing and cerebral (brain) death". As evolution has progressed, the 'higher' organisms have developed complex and complicated attitudes and reactions to death.

To the humans, death has several dimensions. One can look at the concept of death from several perspectives:

Medical

Religious and Social

Emotional

Pragmatic

The Medical Concept of death

Recognising death as cessation of life is generally straightforward. The standard tool used by doctors is to use a stethoscope to confirm the cessation of heart sounds and breathing before declaring a patient dead. With technological advancement, machines to support various organ-systems have been developed. With the use of these machines, patients who would be otherwise considered dead are kept alive. The breathing and heart function can be supported, thus knocking away the traditional medical basis of defining death.

However, a stage may be reached when the patient can never function without these machines as the very 'being' in all of us, namely, the brain, cannot function. Thus the concept of 'brain death' has arisen. The core issue is that we are not 'beings' if the brain cannot function, even if the heart is beating and other systems are working. Complicating the issue is the fact that the cessation of brain function may be temporary. Hence to define death in terms of 'brain death', the loss of function of the brain must be proved to be permanent. This definition of 'brain death' is of paramount importance in organ transplant programmes because various organs like kidneys, heart, lungs and liver are 'taken' from 'dead' patients whose *hearts are technically beating and the lungs are supported by ventilators (breathing machines)*. Medical and legal experts in various countries have come together to define brain death. While small technical differences in this definition may exist between countries, the salient features in the definition are as follows:

1. Complete unresponsiveness to any form of external stimulus
2. Total absence of spontaneous muscular movements for one hour; absence of response to pain, touch or sound
3. Total absence of spontaneous breathing for 3 minutes if the attached ventilator is disconnected.
4. Absence of certain reflexes (reactions to stimuli) like the gag reflex, blink reflex etc. that define the loss of 'brain stem' function.
5. Some countries insist on a 'flat' electrical tracing in EEG (electro-encephalogram) that measures the electrical activity of the brain.

The authority to define death by the above criteria is given to doctors with experience in the field (eg. Neurologists, Intensive care specialists) with two further measures to avoid improper certification:

Doctors involved in the day to day treatment of the patient or

members of the transplant team are excluded from the certifying process. Only independent medical personnel with experience in the field are allowed to undertake the evaluation of brain death.

These independent doctors, further repeat the tests 24 hours later and only when this again confirms brain death, do they issue the death certificate.

The lay person may view all this with a degree of apprehension. Years of refinement and experience have made this evaluation process, a reliable one. The doctors, while being confident about the accuracy of their definition and diagnosis of brain death, have to grapple with the social and emotional aspects of this phenomenon. This is still a grey area, particularly in our society, where deep suspicions and lack of trust are inherent in all walks of life.

Religious Aspects of Death

Various religions have played a major role in shaping the way we think and live and naturally they also play major role in shaping our thoughts on and reaction to, death. Most religions recognise the 'breath of life' and the 'mind' or the 'soul' as two important concepts in life. Death, as a corollary, is an absence of these two. Thus most religions stress the need for continued breathing and continuation of the 'conscious' state as features of life.

Ancient Egyptians did not recognise the brain as central to all 'conscious' activity, but rather placed greater importance on the heart as the anatomical site of 'being' in the body.

The Hindus have brought in the concept of the body being distinct from the soul or 'atman'. When the 'atman' leaves the body, death ensues. Brain as the seat of 'conscious life' (the hrudaya) and the importance of 'life breath' (Prana) are well established in the Hindu religion.

The Buddhists consider life, death and rebirth, a continuos process.

Thus to them death is not a cessation, but a transition or a transformation.

The Judaic texts again refer to the absence of 'breath of life' and the departure of soul as indicators of death. It is interesting that the concept of circulation, pulse and heartbeat occurred much later and do not figure in these religious texts.

Christianity also recognises that death occurs when the soul leaves the body. The Human individual consists of two components - the psyche and the physical elements. The value of life springs from the spiritual in man and when this leaves the somatic element, death and disintegration occur. Christianity also believes in the continuation of the psyche or spiritual principle after death of the somatic element.

Islamic thought is influenced by judaic ideas that predated it. Islamic thought indicates the following about death - "The nature of the spirit or soul, nobody knows. All that man knows is that when it is breathed in he gets human life and when it departs, he is dead"

In addition to these religious thoughts, religions have established rituals associated with death. These include ritualistic incantations, procedures for dealing with the dead body as well as code of conduct for the family and friends of the dead. Social events like the 'Shraddha' or the 'wake' are closely intertwined with the religious aspects and are probably designed to propagate the tenets laid out in each religion.

Emotional Aspects of Death

Human reaction to death of a loved one is perhaps the most evolved of reactions. The reaction involves a wide range of psychological phenomena. There is an initial phase of denial. Following this a whole range of emotions like sadness, loneliness, guilt and reactive depression, occur. One then goes through a phase of remorse and anger against oneself for, perhaps, not having done things differently

to prevent the loss. Finally, after a period varying from months to years, a phase of acceptance of the loss occurs.

The Pragmatic Approach

Death is inevitable after birth, in every life. Society in general and doctors in particular, have to accept this. It is also true that death nowadays occurs slowly, over several weeks to months, due to degenerative diseases and less often, suddenly. This leads to areas of confusion and conflict in dealing with death.

We must accept that death is generally an unremarkable event in nature. Many animal species die well before the age of maturity. The same law of nature, applied to the human animal, would result in many younger people dying, than is generally seen. When humans die of 'natural causes' in their old age, we must realise that this phenomenon is different from the laws of nature applicable to other animals. This has come about because of practice of medicine. Also, with medicine controlling the final rite of passage, death is being stripped of many of its traditional moral connotations; the dying are stripped of their identities and their pasts.

We must realise that doctors are not superhuman, infallible, invincible or omnipotent. On the part of the doctors, they must realise that death is not necessarily a 'failure' and the concept of 'life at any cost' is unrealistic.

Society must accept the concept that the quality of life is more important than quantity of life. There is dignity, even in death. This must be allowed to happen as nature designed it. Unfortunately, the disturbing trend of symptom based supportive care, devoid of thought towards the patient/person as a whole and stress on prolonging life rather than improving its quality, is presently deeply entrenched. It is for all segments of society to come together and have a debate on this issue and establish a consensus view. A set of guidelines can be produced so that patients, lawyers, religious leaders and doctors can

all have these guidelines to fall back on before making important decisions.

Further reading:

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Let us Take the Lead

Dr. M. Balasubrahmanyan

Our system of medical education has not done anything to train the medical students, in adopting a spiritual approach to the treatment of human illness, though an enormous amount of literature is coming up from Western countries on the subject. If one takes the trouble to quickly browse the web sites, one can come across literally several thousands of titles on the subject, listed therein, mostly from the USA and some from Australia and UK. It is not suggested here that we should copy them, but we should know that this is not a new approach to us since our ancient medical literature has plenty to tell us on this subject of spirituality and medicine. In USA the spiritual approach to patient care, though comparatively recent, has assumed so much importance that out of 125 and odd medical schools there 84 of them had, by 2004, already introduced spirituality as a subject in the curriculum. To cite an example, in the University of Virginia Medical school they have since 1998, been teaching the subject all through the four years of study, and twice a year they have meets where they explore issues or controversies in spirituality, religion and medicine, with the students, staff and the public taking part. Several other institutions like Boston University George Washington University for spirituality and health, Rhode Island Hospital, University Hospitals Cleveland, University of Colorado Health Sciences Center, Kettering Medical Centre, Loma Linda University School of Medicine, Orlando Regional Health Care System, Oregon Health Sciences School of Medicine, University of Pennsylvania School of Medicine, St. Vincent Family Medicine Residency Programme,

Southern Illinois University School of Medicine and many others have been incorporating the topic of Spirituality and Medicine in their teaching schedules. The Joint Council for Accredition of Health Care Organizations has recognized the influence of spirituality in hospitalized patients and requires a hospital chaplain or access to pastoral services in the standards for accredition of all hospitals. However their approach to spirituality is somewhat different from ours, and the boundary between religion and spirituality, as practiced, appears to be somewhat hazy. "These two can be interrelated. Spiritual belief may or may not be religious, but most religious people will be spiritual. A non-religious person may still therefore have a deep spirituality and spiritual needs" (British Medical Journal. Editorial.Vol. 329.17th July, 2004). These words more or less reflect the position in Western countries. In our country people may fall under two groups, the common man who is religious but not spiritual and the enlightened spiritual persons who though spiritual do not reject religion. As elaborated in this treatise, our approach is rooted in the basic ideas of oneness of all life, and their interdependence on and interaction with each other, that all healing is self-healing and is brought about by the inherent divinity in man and not merely mediated by the psyche of the patient. Hence there is no need for us to follow, any of the curricula of the western universities. We will have to devise our own curricula to suit our spiritual and philosophical background.

The first step in this direction is to enable our medical profession to become acquainted, through CME programmes, with all available information on the subject and encourage them to adopt some of the well established methods in their practice. This is important since one finds that the profession in this country, in general, is reluctant to talk about it or even to hear a lecture on the topic. It has to basically accept that any measure proved to be beneficial to the patient must be given a trial, since the relief of human suffering is the primary responsibility

of the profession and no such measure can be a taboo. Simultaneously our medical educators should take the initiative to introduce the subject into the curriculum of the medical schools, so that the future generation does not develop the same cynical attitude generally seen among the present generation of practitioners of modern medicine. One of the objections that may be raised by the reformers is whether it is right to teach what has not yet been fully established by science. Let us pause for a moment and think of the many things which we taught our students, say fifty or sixty years ago that have been proved to be wrong by subsequent scientific findings, and many other things we taught then were only empirical at that time and only later they were scientifically established to be true. As Prof. B.M. Hegde, (former Vice Chancellor, Manipal University, Manipal) says, "....the science of medicine needs a quantum jump. Science is change. Anything that does not change can never be called good science". Let us take a bold step and act! "We hold in our hands and hearts the future of medicine and the medicine of the future" (Virginia S.Harris.The Future of Medicine and the Medicine of the Future. Christian Science Sentinel, Special reprint).

The second step is to get together an enlightened group to chalk out the various means of implementing the programme and devise curriculum patterns, based entirely on our view of spirituality and religion and taking into account the beliefs and way of life of our people. A parallel step to be planned is to get in place a teaching faculty for the subject Of course this may take a considerable time to develop, but meanwhile, we may have to utilize appropriately, personal, institutional and community resources for assistance in imparting information on the subject, by way of lectures and group discussions, but not employ them as part of the faculty. There are many spiritual groups or organizations in the country which can be tapped, so long as they are not purely sectarian and present only restricted religious views. There are many religious and spiritual

organizations which offer medical services to the community, but it is doubtful whether any of them have really incorporated spirituality into their treatment schedules.

Should spirituality be introduced into the medical curriculum as a separate subject? Probably not; it may then suffer the same fate like some of the other subjects, the details of which were forgotten after passing the concerned examinations. It may be better to incorporate and integrate the various aspects of the subject into the existing curriculum at all the levels, the preclinical, paraclinical and clinical stages. The departments of Psychiatry and Social and Preventive Medicine will have to play a major role in the implementation of such a curriculum. What should be the aim of such a curriculum?

The learning objectives:

To understand the distinction between Religion and Spirituality and to have a basic knowledge regarding the concept of the Spirit, against a scientific background.

To have a basic knowledge about the findings of quantum physics with particular reference to energy and electromagnetic radiations and the concept of biocommunication.

To appreciate the basic differences and similarities in the three main Hindu philosophical thoughts, and other major religions in the country.

To understand the traditions of our people with regard to their religious beliefs and rituals and their influence on health, diseases, suffering, birth and death.

To learn more about the mind and mental processes, with particular reference to the views enunciated in our scriptures.

To understand the part played by religion and spirituality on the life span.

To define and interpret the role of spiritual procedures in the maintenance of health, origin of diseases, immunity and healing and the anatomical and physiological basis of the procedures.

To understand the ecological and environmental factors that influence health and the origin of diseases and take a holistic view of health and medical care.

To understand the basic principles and working of the alternative systems of medicine.

To stimulate and develop one's own spirituality and understand the influence of the physician's consciousness on that of the patient.

To appreciate that religion and spirituality play an equal role, in addition to the medical factors in medical decision making.

To learn to take proper religious and spiritual history of the patient, recording therein his belief systems and intensity of faith in the role of religious procedures in the cure of his illness.

To arrive at a formal spiritual assessment of the patient.

To develop skills in counseling.

To effectively put into practice the various spirituality based counseling procedures in different diseases and class of patients and to scientifically assess the effectiveness of the techniques employed.

To develop a balanced and scientific approach to common beliefs like karma, sins and divine punishment and learn to offer counseling to the patient in such a way as to prevent the deterrent effects of such beliefs on healing.

Learn to communicate effectively with chronically ill and dying patients and their families

To be aware of all the ongoing research in Spirituality and medicine and constantly update his knowledge.

In conclusion let us hope that the medical profession in our country will respond favourably to the new revolution that is coming, which is bound to change the face of the profession before we reach the mid 21st century and enable Medical science to emerge as a better science.

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For whom is this book intended? According to the editors "We have in mind, the nervous first year students taking their first professional examination, be it medical, dental, nursing or AYUSH; the bored third year student of medical jurisprudence who needs to see some humour in medicine; the neophyte intern with MCQs in his apron pocket rather than a dental mouth mirror or a stethoscope; the young doctor who wants to be ethical and set up practice away from overcrowded cities; that single turned thirty, unsure of whether to get into wedlock or get away to Australia or Singapore, since PLAB and USMLE have become distant shores! Also to those who would like to be good teachers and examiners or would rather publish than perish and hence have something to learn about use of libraries or computers for their research. We also have in mind of surgeons whose knots are slipping making them contemplate when to retire or those quality conscious hospital managers or those holistic and spiritually minded seniors asking what is death? Thus, you will notice that the chapters in this book not only deal with personal development but also the type of doctor our country needs".

The Cover

The illustration on the cover depicts the existing status of health science education/training which is bound by regulations and rigid curriculum with emphasis on acquiring information rather than wisdom with little or no scope to exploit the creative potential of learner. When the student emerges out, he is at once awed at the gap between his preparation and real needs of community which is portrayed on his face.

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